

THE Soybean Digest

REG. U. S. PAT. OFF.

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The American Soybean Association

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APRIL, 1946

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Bemis Multiwall Paper Bags, (available in pasted and sewn types, valved or open-mouth) are preferred for a wide range of processed products. Bemis has six multiwall bag plants.

SOYBEAN DIGEST

EDITOR'S DESK

Developments on the Rivers Bill

Officers and members of the Board of Directors of the American Soybean Association have been watching with great interest the progress of HR 579, known as the Rivers Bill, in the House of Representatives. As originally introduced, HR 579 would remove the federal taxes on the manufacturer, wholesaler and retailer of margarine sold on a colored basis. An amendment being introduced by the American Soybean Association, through Hon. Charles Hoeven of Iowa, a member of the agricultural committee of the House of Representatives, would limit such removal to margarine manufactured from domestically produced fats and oils. Under the proposed amendment, margarine made in the United States from cottonseed oil, soybean oil, peanut oil, or any other vegetable oil or animal fat produced in the United States would be sold tax-free (federal taxes).

In line with resolutions adopted at the 1942, 1943 and 1944 conventions of ASA, the Association, through its officers and board members, plans to back HR 579 to the limit if and when it is amended, thus assuring a much greater market for soybean oil during the postwar years.

Developments will be brought to you in forthcoming issues.

Some Needed Advances

Scientists who should be "in the know" tell us that we are now about to enter the "Age of Chemistry". Great advances are forecast for the next generation, principally along chemurgic lines.

The soybean industry can stand a few such advances. For one thing, there is a distinct need for an accurate, rapid and economical test for the oil content of soybeans. No such thing exists today. Logically, soybeans should be traded on an oil content basis, just as the hard wheats are traded on a protein basis. The new Lincoln soybean, with an oil content considerably higher than previous varieties, should command a premium over average run beans. With an oil of relatively high iodine number (and thus more rapid drying rate), there is even more reason for a premium for Lincoln for processing purposes. Yet today we are stymied, for there is no rapid test for oil content which could be made at country points. Until such a test is developed we must continue to penalize the grower of high quality, high oil content soybeans.

Soybeans produced on soils with high fertility levels in most cases run relatively high in protein content. Yet the producer of high protein beans receives no premium for those beans, and thus no incentive to strive for quality. The Age of Chemistry has several contributions to make to soybean producers.

Our Association Is Incorporated

Effective February 28, the American Soybean Association started operations as a corporation. Organized under the Iowa corporation law as a corporation not for pecuniary profit, the Articles of Incorporation

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and the By-Laws as filed with the Secretary of State for Iowa are carried elsewhere in this issue.

Incorporation of the American Soybean Association has been under consideration for several years, and was authorized at the 1944 annual convention. Publication of *The Soybean Digest*, together with other varied and more extensive association activities, made incorporation more necessary as the years passed. Great care was exercised in writing the articles as filed, with especial emphasis on provision for future development of the Association. The best of legal assistance was employed in the attempt to provide the pattern by which the Association would continue to grow and thrive.

We suggest you study the Articles—and the By-Laws—carefully so that you will be familiar with their provisions.

A. S. A.'s 1946 Convention Plans are going forward for the 1946 annual convention of the American Soybean Association to be held in St. Louis August 29-31.

Your committee met in St. Louis March 18 and 19 to make plans for the biggest convention in the Association's 26-year history. Members at the meeting included Harry Plattner, Malta Bend, Mo.; Donald Walker, St. Louis; Jacob Hartz, Stuttgart, Ark.; Geo. M. Strayer, Hudson, Iowa, together with the Association's president, Howard L. Roach, Plainfield, Iowa.

The convention will be held at the Jefferson Hotel.

General theme of the 1946 meeting will be "Industrial Utilization of Soybeans," a subject of vital interest to all soybeaners from grower to manufacturer. Since the meeting is being held in the South, there will be special emphasis on the southern soybean producing section where soybeans are rapidly forging to the front.

With wartime travel restrictions now happily in the past and with everybody free to concentrate on the peacetime future, all signs point to a highly successful meeting.

We are planning on a big crowd. It is not too early to red circle the dates August 29, 30 and 31. Details will appear in later issues.

Just in Passing . . .

The 51.9 bushels by Eugene Gwaltney in the 1945 Indiana soybean yield contest is the record to date for such contests. Better varieties and more "knowhow" of growers are boosting yields. . . The abnormal growing season of 1945 brought the weed problem to the front, with many weedy fields all over the Soybelt. See the article, "Weedy Soybeans Out!" by L. V. Sherwood of the agronomy staff of the University of Illinois, on page 12. . . The predictions of Howard L. Roach, president of the American Soybean Association, made before the National Farm Chemurgic Council in March, concerning the probable downward trend in soybean production, are borne out by the USDA crop reporting board. The smallest acreage since 1941 is forecast for 1946. Situation for soybeans now can only be saved by another late spring.



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trification and structural design, as well as construction groups, purchasing, accounting and administrative staffs. Each engineered detail is a link in the chain toward perfection.

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BLAW-KNOX PROCESS EQUIPMENT

GWALTNEY STATE WINNER

52 Bu. in Indiana

One hundred and twenty-six Indiana growers participated in that state's 1945 soybean yield contest, with an average yield of 36.7 bushels per acre.

This is the largest number of entrants and the highest average yield in the 6-year history of the contest, according to K. E. Beeson, secretary of the Indiana Corn Growers Association.

Eugene Gwaltney of Delaware County was the state winner with a field of Lincolns. His yield, 51.9 bushels per acre, was the highest ever turned out by an Indiana yield contestant, topping the 47.9 bushel yield of Merle Custer, Grant County, in 1942.

One hundred and one of the 126 contestants grew the Lincoln variety, as compared with 44 in 1944. Second in popularity was Richland, which was grown by 13. A few grew Dunfield, Earlyana, Illini, Gibson and Chief.

As has been true every year the most common rotation reported was corn, soybeans, small grain and clover. Seventy-two participants used this rotation, and it is very popular in soybean growing sections of Indiana. It is likewise the most logical sequence of crops from every standpoint. In fact 110 of the contestants planted soys after corn, and a few planted soys after soys or other legumes. The preceding crop did not seem to appreciably affect the yield, and this result is in line with Purdue Experiment Station findings.

Fifty-four percent of the growers planted in May with an average yield of 37.5 bushels per acre; 44 percent of the

growers planted in June with an average yield of 37.0 bushels per acre. One grower in southern Indiana planted on July 4th with an average yield of 40.9 bushels per acre.

Almost all contestants planted their soys in rows, and in most cases wide rows in order to use available corn planting and cultivating equipment. Although the Lincoln and other late varieties were most commonly used in the 1945 contest, yields averaged higher in narrow rows than wide. An assumption that the Lincoln would fill the rows so effectively as to do as well in wide rows as narrow was not borne out by average yields. In rows ranging from 32 inches to 42 inches the average yield for 80 growers was 37.2 bu. while in rows ranging from 19 inches to 31 inches the average was 38.8 bu. per acre for 17 growers. Consistently, narrow rows have given higher yields per acre than wide rows in the Indiana contest.

The desire of Lincoln growers, most of whom were producing certified seed, to grow the maximum yield of high quality seed of top germination led to an increased use of fertilizer in 1945, and also to higher yields. The 54 growers who fertilized averaged 37.96 bushels and the 65 who did not fertilize averaged 35.8 bushels. Seven applied manure to their contest fields with an average of 35.8 bushels.

Twenty-one of the 43 gold medal winners used fertilizers with yields of over 40 bushel per acre; eight plowed down

(Continued on page 31)

Myron Cromer, county agent of Delaware County, Ind., holding the Roy Caldwell trophy which was awarded to Eugene Gwaltney, soybean champion of Indiana with a production of 51.9 bushels per acre. Dean Hockeme honored the champions of 1945 at the annual banquet of the Indiana Corn Growers Association.



CASE HISTORY No. 4
in a series of factual experiences of a group of American manufacturers with Multiwall Paper Bags.

COST COMPARISON

	100 lb. Open-Mouth Fabric Bags	100 lb. Multiwall Paper Valve Bags
Bag cost per M	170.00	92.66
Bag cost per 100 lbs.	.1700	.0927
Labor cost per 100 lbs.	.0029	.0024
Total bag and labor cost per 100 lbs.	.1729	.0951
Saving per bag, paper over cotton		.0776
Saving per ton, paper over cotton		1.56

DETAILS OF LABOR COSTS

Fabric Bags	Production per hour	Cost per 100 lbs.
4 men packing and closing at 95¢ per hour	132,000 lbs.	.0029
Multiwall Paper Valve Bags		
4 men operating packers at 95¢ per hour	156,000 lbs.	.0024

CLASS OF PRODUCT PACKED

CEMENT	FERTILIZER
CHEMICALS	FOOD ✓
FEEDSTUFFS	MISCELLANEOUS

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ABRASIVE ✓	GRANULAR ✓
CORROSIVE ✓	HEAVY ✓
DELIQUESCENT	HYGROSCOPIC ✓
FLUFFY ✓	LIGHT
FREE-FLOWING ✓	VISCOUS

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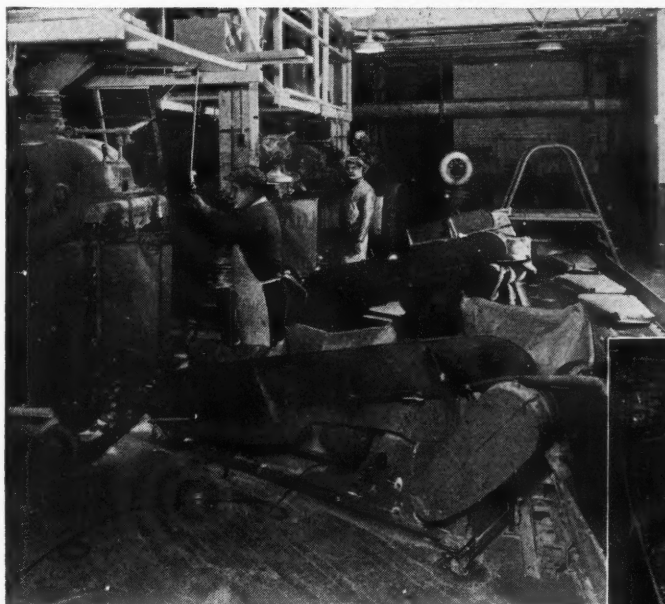
PROTECTION: The multiple layers of kraft paper combined with a moisture proof sheet prevent penetration of water and atmospheric moisture and keep the salt clean and free from caking. No longer is there any problem of lint and dirt in the salt.

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INCREASED PRODUCTION: An increase of 18 per cent per hour in packaging output, with the same crew, was made possible through use of Multiwall Paper Bags and St. Regis Valve Bag Packers.

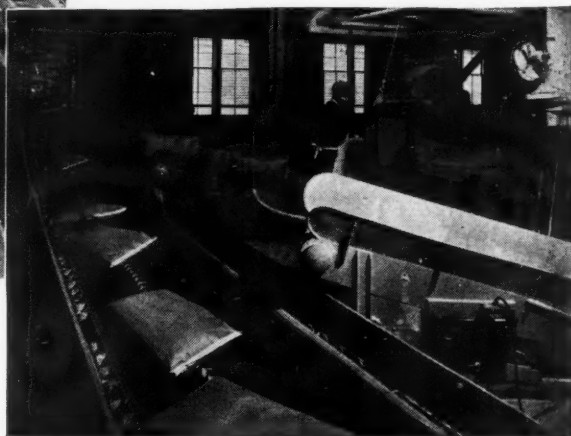
EASIER HANDLING: Small portable conveyors running from each of the valve bag filling machines deliver the 100-lb. bags to a large master conveyor on which they ride to the shipping room.

CONSUMER PREFERENCE: Customers express satisfaction with the Multiwall Bag because it protects the product in transit and while stored and eliminates the danger of the salt absorbing odors from other commodities.



Left: Operators filling 100-lb. Multi-wall paper bags using St. Regis Valve Bag Packers. Machine deposits filled bags on small portable conveyors.

Below: From small conveyors illustrated on left filled bags are delivered to this master conveyor which delivers the 100-lb. bags to the shipping room.



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THE SOYBEAN SITUATION

in 1946

B EING a man of few words, and having had training that requires conclusions to be reached promptly, I shall unhesitatingly state at the beginning of this paper, that the situation for soybeans in 1946, with respect to planted acreage, is not favorable. Fewer acres will be planted to soybeans in 1946 than were planted in 1945.

Now that I have given you my conclusion regarding the soybean situation for 1946, I am sure you will expect me to present to you the reasoning behind this apparent snap judgment.

All crops grown on American farms by American farmers compete with each other for acreage. I believe we all agree on this point. As long as the profit system motivates planning in agriculture, farmers will be inclined to plant the crop that gives the greatest cash return, other factors being equal.

In the Cornbelt, soybeans compete with corn, oats, wheat, rotation pasture and hay land.

Outside the Cornbelt, soybeans contend with cotton, rice, peanuts and hay for the chance to grow.

Since the greatest soybean acreage is in the Cornbelt, let us look for a moment at the picture there.

The typical Cornbelt farm includes an acreage of corn, oats, soybeans, rotation pasture and hay.

Let me point out the reasoning of the typical Cornbelt farmer as he formed his 1946 cropping plans and decided whether a given acreage should be planted to either soybeans, corn or small grain.

CORN VS. SOYBEANS

Let us first consider the case of corn versus soybeans.

We should remember that already farm plans have been nearly completed for the current year. Ever since the early part of December, there has been rivalry for the purchase of corn between livestock farmers and others, for feeding and industrial uses.

As early as November, the U. S. Department of Agriculture realized the short position of the corn crop and asked the Triple A goals committees in various Cornbelt states to recommend the same acreage of corn for 1946 as for 1945. In their goal recommendation, however, the same



By HOWARD L. ROACH

people recommended an overall reduction in soybeans of approximately 10 percent.

These recommendations, together with the grape-vine rumor that the support price for soybeans would be fixed at somewhere around \$1.80 per bushel, led the farmers to believe that corn would be in a stronger position than soybeans. That opinion influenced farm planning which progressed steadily throughout the winter.

The scarcity of corn for feed and industrial uses, together with our large livestock population and the small carry-over of corn, has made the farmer extremely corn-conscious.

Livestock farmers do not like to have a yard of unfinished livestock, no corn in the crib, money in the bank and be unable to find corn for sale.

The cost of land preparation, planting, tilling and harvesting is approximately the same for a crop of soybeans as for a crop of corn. When the farmer contemplates his cash return from corn or soybeans, he estimates the return at the amount of dollars he will receive per bushel of the harvested crop.

Corn has been netting the farmer considerably more than ceiling prices when fed to livestock, while soybeans have been selling at support prices. There are rumors

that there have been black market operations enabling the farmer to receive more than ceiling price for that portion of his corn which he had for sale.

Now, it is easy to see that the farmer was assured of a ceiling price or better for his corn, while he was under the impression that he would receive only around \$1.80 for his soybeans.

Recent increases in the ceiling prices on corn and other grains without corresponding increases in the support price for soybeans, have justified this thinking on the part of the farmer and he is even now looking forward to further increases in ceilings.

All of this has directed the farmer's attention toward corn and away from soybeans.

There is no doubt that an announcement before January first of a support price of \$2.04 per bushel for soybeans would have influenced planning toward a greater acreage of this commodity.

It was repeatedly called to the attention of those persons having charge of the soybean program, that an early announcement of a support price was necessary to maintain a normal acreage of beans. However, for some reason known only to Washington, a support program for soybeans was delayed until planting plans had been formulated by individual farmers.

Farmers in planning crops must obtain seed, fertilizer, machinery, and plan their labor well in advance of the planting date and once a decision has been reached and these arrangements made, they are not inclined to change.

Disappointing yields of soybeans in 1945, due to climatic conditions and late planting, also influenced the farmer to consider other crops in place of soybeans.

This, then, is the corn-soybean picture.

SMALL GRAIN AND SOYBEANS

Now let us consider the competition between soybeans and small grains for planted acreage during the current year.

Small grain can be seeded, tilled, and harvested with less expense than soybeans, and utilizes labor at a different period of time, and while the net return is less per acre, scarcity of labor has strongly influenced the farmer toward an increased acreage of small grains.

New varieties of small grains, particular-

● *An address by the president of the American Soybean Association, at the 11th annual Chemurgic Conference of Agriculture, Industry and Science in St. Louis, Mo., March 20.*

ly oats, together with the good yields harvested in 1945, made many farmers feel that small grain acreage should be increased.

We should also remember that small grain can serve as a nurse crop for legume seeding. The depletion of the soil fertility during the recent war years, due to increased planting of inter-tilled crops, has made the farmer feel that additional acreages of clover and alfalfa should be established, and to this end, additional small grain was needed to serve as a nurse crop.

This, then, is the small-grain-soybean picture.

Almost without exception, corn is planted on the most fertile acres of a farm, while soybeans are planted on land not so rich in fertility. It follows then that it is not fair to the soybean crop to consider the overall net return from soybeans as compared with corn or small grain. The average farmer, however, does not take this factor into consideration when determining the crop to which his acres will be planted. He thinks only of the bushels of grain produced at the price he will obtain for same.

It is also true that the average yield of soybeans is more uniform over the years than is the crop of corn or small grain. This is another factor which most farmers have not yet come to realize.

When figures are quoted showing the value of other crops as compared to soybeans, the industry can do a service to the soybean farmer in pointing out these two previously mentioned facts.

SOYBEAN OIL MEAL

In spite of all publicity and notoriety given the varied uses of the end products of soybean processing, the fact remains that over 90 percent of the soybean oil meal manufactured today is consumed by livestock in the form of soybean oil meal or mixed feeds. Practically 100 percent of the soybean oil extracted is being processed for human food.

Nearly all of the livestock and livestock products produced in our nation come from the same farms that grow soybeans, and no small amount of criticism has been voiced by farmers because of their inability to obtain soybean oil meal manufactured from the soybeans which they marketed. This is a decided factor in discouraging the planting of soybeans this year.

Farmers would be inclined to plant an acreage of beans if they felt that they could receive the soybean oil meal in exchange for their crop of beans. They do resent the fact that they must buy mixed feed at a higher price than soybean oil meal, when the chief ingredient of this mixed feed is soybean oil meal.

This one fact is encouraging the planning and installation of additional soybean crushing capacity at a time when those familiar with the industry realize that greater crushing capacity is not warranted.

Many soybean plants are now running at part capacity and a goodly number will soon be closed because of their inability to obtain enough soybeans for crushing.

NEED FOR RESEARCH

The farmers realize that research in finding new uses and more efficient processing of soybeans is necessary. They are encouraging the U. S. Department of Agriculture and the various experiment stations to do additional research on new varieties, on disease and insect control, and on modern cultural practices. They are anxious to adopt these new varieties and practices as soon as they are released and demonstrated to be practical. They are

also anxious to be of assistance to industrial research laboratories. Presentation of problems by research laboratories to the farmer, will find eager and ready response to aid in the solution of these problems.

Soybeans are a new major crop in the United States. The largest acre increase has occurred during the war years, due to a reasonable support price and the patriotic appeal for domestically produced vegetable oil.

Rotations have been established, machinery has been acquired, and cultural skills have been learned, in order that the United States might be sufficient insofar as vegetable oils are concerned.

Now the soybean farmer is wondering what is over the next hill.

THREAT OF IMPORTS

Will it be the policy of our leadership to again become dependent upon imported vegetable oils? Or will the American market be kept for the American farmer?

Acres cannot be put into a stand-by position as can great synthetic rubber plants, awaiting some future national calamity. The farmer must produce on his acres each year.

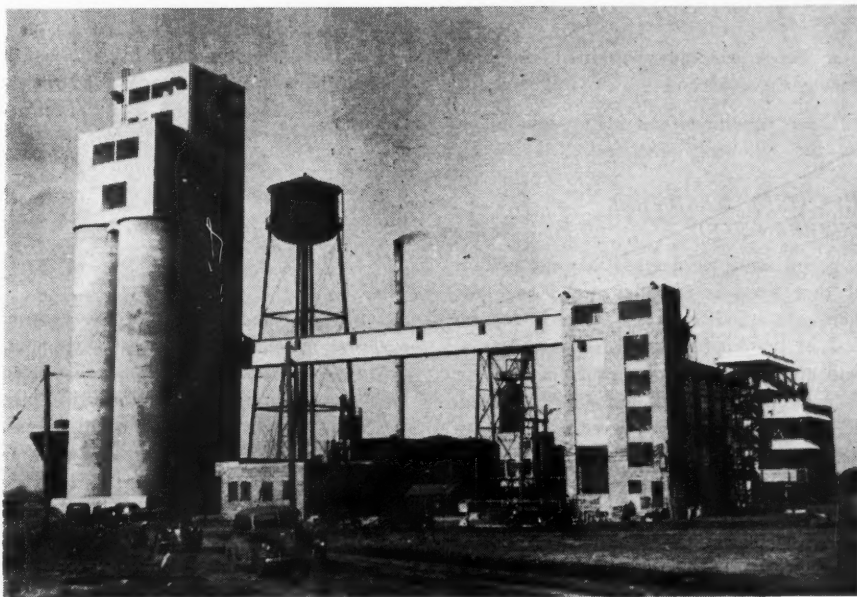
Surely the American farmer, who is an American taxpayer and an American consumer, should have the right to the American market for vegetable oils, and he is anxiously watching with vigilant interest, any new trade agreements that may jeopardize the market which he has been called upon to supply. He feels now that the vegetable oil market in the United States is his market.

Whether the future will see increased
(Continued on page 31)

Allied Mills Plant at Taylorville, Ill.

This new million dollar hexane solvent plant of Allied Mills, Inc., Taylorville, Ill., replaces the plant burned more than a year ago. Manager of the 150 ton daily capacity plant is I. C. Bradley. Each operation is carried out in a separate building to prevent the spread of fire.

—Decatur Herald & Review





Inset —
Weedy soybeans,
solid seeded.



Right —
A field of clean
soybeans, row cul-
tivated.

WEEDY SOYBEANS OUT!

By L. V. SHERWOOD

Assistant Professor Crop Production,
Dept. of Agronomy, University of Illinois

SOYBEANS can be a weed-reducing, rather than a weed-increasing crop.

It has been said that soybeans have done more than almost any other crop to increase the weed problem in Illinois. This is true to some extent, particularly for buttonweed, pigweed, spiny sida, morning glory, jimson weed, ragweed, smart weed, common milkweed, flowering spurge, bull nettle, and possibly others. However, these weeds can be controlled, even while growing soybeans, if:

1. Weed seeds are not planted.
2. Weed seeds already in the soil are destroyed.
3. Weeds are not permitted to grow among the soybeans.

These conditions can be brought about by the following practices.

USE ONLY WEED-FREE SOYBEAN SEED

A few more weed seeds may not matter, if that weed is already spread over the field concerned. But if it is new, regardless of the kind of weed, its introduction will create another weed problem. If there is any question about the purity of seed, have it analyzed. Since weed-free soybean seed is relatively easy to obtain, it may be wise to market soybeans containing much weed seed and buy pure seed rather than spend much time or money on cleaning. In any case, avoid introducing new weeds by planting.

PREPARE SEEDBED EARLY AND THOROUGHLY

Usually only those weed seeds in the upper 2 or 3 inches of soil cause trouble any one year. If seeds which are to be in this upper layer are placed there early enough, the resulting seedlings can be destroyed before the soybeans are planted. This will not destroy all the prospective seedlings. However, it will greatly reduce weed competition. Early plowing, permitting one or two well-timed diskings before final preparation of the seedbed, will help get the soybeans off to a good start. This is particularly important if the soybeans are not cultivated.

This extra working of the soil also makes a finer, more compact seedbed which assures better aeration and more moisture. Even if weeds were not a factor, the improvement in germination and early seedling vigor would make the extra effort profitable.

TIMELY SEEDING

From the standpoint of weed control, soybeans should be seeded when temperature and moisture conditions will bring about rapid germination and growth. Thus, the beans can better compete with weeds. Although soybeans are often seeded after corn has been planted, earlier seedings do well in Illinois. However, soybeans will often rot when seeded in cold wet soils. At least the growth will be retarded and weeds may take over.

ROW PLANT AND CULTIVATE

Soybeans seeded solid and not cultivated have permitted weeds to increase. The saving in labor may be more than offset by lowering the yield and quality of beans, by increasing the harvesting costs, and by increasing the costs of growing succeeding crops. Cultivated row plantings, in addition to better weed control, may actually produce more beans per acre as well as higher quality beans and hay. Soybeans seeded for intertillage may produce more pods per plant and actually yield higher than thicker seedings.

Also according to the number of immature pods, row plantings mature earlier. If such data were obtained, it probably would also show more leaves per plant for the row seedings.

Cultivation to prevent weed growth eliminates weeds during the present as well as succeeding years. The following table shows that even one weed may produce many seeds, some of which may live in the soil for several years and later cause trouble.

Weeds Produce Seeds Abundantly	
Plant	Seeds per plant
Wheat	100
Corn	1,000
Cocklebur	10,000
Ragweed	23,000
Buttonweed	32,000
Sand Bur	43,000

Yield, Maturity and Pods per Soybean Plant are Affected by Method of Seeding.^a

Method of Seeding	Rate of seeding per acre	Number of plants in 10 sq. ft. ^b	Number of pods per plant	Percent immature pods ^c	Yield per acre
	lb.				bu.
24-inch rows (bean drill)	33.9	13	28	12	18.0
	59.3	21	20	8	20.5
	111.1	27	16	12	21.3
8-inch rows (grain drill)	121.4	56	8	48	18.4
	282.4	122	4	75	14.3

^aFrom Illinois Agricultural Experiment Station, Bulletin No. 462, 1940.^bAverage of four well-distributed counts.^cPods which, on September 23, were still green in color were classed as immature.

Crabgrass	90,000
Yellow Foxtail	114,000
Pigweed	155,000
Stink Grass	190,000
Water Hemp	945,000
Purslane	1,250,000

For example, buttonweed seed and certain others may live in the soil 15 or 20 years or even longer before germinating. However, if they are encouraged to germinate, the resulting seedlings can be destroyed. Cultivations do help reduce weed seed in the soil.

Weed Seeds in the Top Seven Inches of a Canadian Surface Soil.

Place	Weed Seed per sq. ft.
Roadside	40,000
Small grain field for 9 years	15,000
Sod, 6 years out of rotation	8,000
Rotated land for 10 years	3,000

Land where crops were rotated for 10 years had only 3,000 seeds per square foot as compared to 40,000 in a noncultivated roadside.

Cultivating soybeans gives higher yield, higher quality, reduced harvesting costs, fewer weeds in succeeding crops and maintains the selling value of the land.

TEST AND TREAT THE SOIL

Vigorously growing soybeans offer more competition for weeds. Since soybeans require considerable phosphorus and potassium, tests should be made and these two elements added if needed.

LIME AND INOCULATE

Since inoculant is cheap, it is advisable to inoculate soybeans in every case. This enables soybean plants to obtain nitrogen from the air. But nodulation may be poor or non-existent in acid soils. This may necessitate liming. Inexpensive tests can be made to determine the liming needs. Farm advisers can usually help make such tests.

Liming the soil and inoculating the soybean seeds are often the best and cheapest assurance of a vigorous growing high-yielding crop, which in turn is good competition to prevent weed growth.

CHEMICALS

So far there are no chemicals which

can be applied to kill weeds in soybeans and at the same time not kill the soybeans. Such a differential spray exists for weeds in lawns, but not for weeds in soybeans.

SUMMARY

Weeds can be greatly reduced and sometimes totally eliminated in soy-

beans if the following practices are followed:

1. Use only weed-free soybean seed.
2. Prepare the seedbed early and destroy the weed growth once or twice before seeding the crop.
3. Seed soybeans at a time when they will grow vigorously and offer better competition for weeds.
4. Row plant and cultivate to prevent weed growth.
5. Test the soil for phosphorus and potassium. If needed, add recommended quantities to assure vigorous growth.
6. Lime if needed.
7. Always inoculate to assure sufficient nitrogen for vigorous plant growth.



—USDA Fish and Wildlife Service
GROUNDHOG — A soybean field nearby?

A Glutton for Soybeans

Whatever legends there may be about the groundhog it is no legend that he likes his protein and is not averse to taking it in the form of tender young soybean shoots just emerging through the topsoil.

Groundhogs are systematic fellows and will go down a beanrow devouring each plant as they come to it. A good sized groundhog may destroy a large fraction of an acre.

The groundhog is not the only creature, however, that appreciates the superior nutritive qualities of the soybean. Bobwhites and pheasants frequent the fields at harvest time.

In Hawaii, doves are so fond of soybeans that they constitute a major pest.

And rabbits the world over are soybean gluttons. In areas where rabbit populations are large there may be difficulty in raising a crop—as in the western U. S. or in France.

Bunny will seek out edible soys in town gardens, and defoliate entire rows.

An Iowa State College prof has found one advantage in the rabbit's love for Soja max. He recommends that gardeners who are troubled by rabbits plant a row of soybeans completely around the outside of the garden. They will be kept so busy feasting on the soys that they will forget about the rest of the garden, he says.

Cultural Practices

By J. W. CALLAND

Director of Agronomic Research
Central Soya Company, Inc.



An early cultivation with the rotary hoe or harrow is important for weed control.

In Ohio

FIFTEEN-HUNDRED soybean growers in 18 of the principal soybean counties* of northwestern Ohio answered questionnaires on how they grew their 1944 soybean crop. This information was requested by the county agents. The growers reports cover 50,000 acres of soybeans. By summarizing these reports we can get a good look at the cultural practices used in these 18 counties which grow 54 percent of Ohio's soybeans.

The average soybean grower in these counties grew 33 acres of soybeans and harvested 21½ bushels to the acre. Ninety-one percent planted their soybeans solid with a yield of 21.3 bushels, while 9 percent planted in rows and got 22.7 bushels—1.4 bushels extra. In 13 of the 18 counties row beans gave better yields than solid plantings. Weeds were much worse in solid fields in 1945 and the yield advantage of row beans was doubtless still greater than it was in 1944. In some solid fields in 1945 weeds reduced the soybean yield by as much as 10 bushels per acre.

Growers in Morrow, Huron and Marion Counties very definitely favor solid plantings with 99, 97 and 95 percent solid. On the row side of the picture Mercer County leads with 27 percent in rows, followed by 20 percent in Champaign and 18 percent in Lucas.

Growers planting solid used 1.86 bushels of seed per acre while row planters used 1.07 bushels. The reasons given in other soybean growing areas for the decided swing

from solid to row planting have not caused Ohio growers to change their seeding methods. However, it is to be expected that the serious weed conditions of 1945 will influence a larger proportion of farmers to plant in rows.

Thirty-four of each 100 growers planting solid cultivated their soybeans after planting. The other 66 did not. This survey does not show what steps were taken to kill weeds before planting, but the growers who cultivated their solid beans harvested .9 of a bushel more beans per acre. The greatest gain in yield for cultivation was 4.3 bushels for Seneca County, while with growers in Logan, Sandusky, Henry and Wood the increase for cultivating solid soybeans ranged

between 3 and 4 bushels per acre.

The rotary hoe was used for 64 percent of the cultivating done on solid beans, the spike-tooth harrow 27 percent, the weeder 7 percent and the cultipacker 2 percent. Sixty-eight out of each 100 growers cultivated but once, 26 cultivated twice and six cultivated three times.

Fifty-seven out of each 100 growers planting in rows used the corn planter, 23 the grain drill and 20 used the beet and bean drill. An interesting comparison appears here. Beans planted with the corn planter had an average row-width of 38 inches and a yield of 20.9 bushels; rows planted with grain drill averaged 24 inches wide with a 24.4 bushel yield; while rows planted with the beet and bean drill had an average row-width of 21 inches and a yield of 26.9 bushels. It seems that this difference in yield per acre is due to row-width rather than to the implement used for planting row beans; since we get similar results by grouping the row-widths, regardless of implements used, into narrow, medium and wide rows. See Table 1.

TABLE 1. Comparative Yield of Row Soybeans (120 Growers)

Planter used	Average Row-width	Average Yield per A.
Corn Planter	38 in.	20.9
Grain Drill	24 in.	24.4
Beet & Bean Drill	21 in.	26.9
Row-Width Groups		
All wide rows	38 to 42 in.	21.8
All medium rows	30 to 36 in.	24.3
All narrow rows	20 to 28 in.	25.7

Eighteen percent of the row beans got one cultivation, 36 percent got two, and 46 percent got three, 59 percent of the cultivating was done with the regular cultivator, 30 percent with the rotary hoe, 7 percent with the harrow and 4 percent with the weeder.

The Manchus, a variety in many instances so badly mixed as to have almost lost its identity, continued to hold first place in acre-

Advantages of row-planting soybeans: 1. Less seed. 2. Better weed control. 3. Earlier harvest. 4. Better yields.



*Auglaize, Champaign, Delaware, Hancock, Henry, Huron, Logan, Lucas, Marion, Mercer, Morrow, Paulding, Putnam, Sandusky, Seneca, Union, Van Wert, and Wood.

● The third of three articles on soybean cultural practice surveys by Mr. Cal-land. Reports on the Indiana and Illinois surveys appeared in February and March issues.

age planted in Ohio in 1944 with 38 percent of the growers planting it. The stiff-stemmed Richland was next in favor with 30 percent planting it, followed by Dunfield, Mandell and Mingo. These five varieties account for 90 percent of the soybean acreage in 1944.

Only three varieties are recommended by the College of Agriculture and the Experiment Station for planting in Ohio in 1946. (1) Earlyana for the northern part of the state when wheat is to follow soybeans; (2) Richland for use on fertile fields where other varieties might go down; (3) Lincoln to replace all other mid-season varieties such as Dunfield, Illini, Mandell, Manchu, Scioto and Mingo.

TABLE 2. Choice of Varieties and Variety Yields.

Variety	Number of Times Used	Percent of Growers Using	Average Yield
Manchu	454	38	22.3
Richland	357	30	21.8
Dunfield	143	12	21.8
Mandell	84	7	20.3
Mingo	41	4	21.4
Illini	29	2	20.7
Scioto	19	2	24.0
Mandarin	18	2	18.7
Lincoln	14	1	23.3
Earlyana	6	0.5	20.8
Others	18	2	25.6

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The kind of soil planted to soybeans very definitely affected yields. Growers were asked to classify the soil as dark, mixed or light. Twenty-six of each hundred growers planted on dark soil with an average yield of 24.2 bushels, 61 classed the soil as mixed with a 21.2 bushels yield, and 13 said light soil and 20.6 bushels. This spread of 3.6 bushels per acre between dark and light soils while not as large as might have been expected still points out that while soybeans may yield comparatively better than other crops on light soils they also respond well to improved fertility. Similar surveys gave an increase in yield of 7 bushels per acre for dark soils over light in Illinois and 4.3 bushels in Indiana.

Soil preparation did not greatly affect yield. Eighty-three percent plowed their fields and took off .3 of a bushel more beans per acre than the growers who used the disk rather than the plow.

Apparently the fields in most of these 18 counties now carry almost sufficient amounts of soybean inoculating bacteria. It is quite generally agreed that the cost of properly inoculating soybean seed is so low and the insurance value so high that it is only good business to inoculate. Moreover, the soybean may not be able to add to the soil's nitrogen

FOR THE THREE STATES

Summary of Soybean Cultural Practices — 1944 Crop

Reported by 4,200 Growers in 48 of the Principal Soybean Counties of Illinois, Indiana, and Ohio

	Illinois	Indiana	Ohio
Average grower	58 A., Yield 25 bu.	34 A., Yield 21.7 bu.	33 A., Yield 21.4 bu.
Percent Planted Solid	42%, Yield 24.6 bu.	55%, Yield 21.6 bu.	91%, Yield 21.3 bu.
Percent Planted in Rows	58%, Yield 25.3 bu.	45%, Yield 21.9 bu.	9%, Yield 22.7 bu.
Increase for Row Planting	.7 bu.	.3 bu.	1.4 bu.
Seed used per acre Solid	1.6 bu.	1.9 bu.	1.9 bu.
Seed used per acre Rows	1.1 bu.	.9 bu.	1.1 bu.
Percent Solid beans Cultivated	72%, Yield 24.9 bu.	40%, Yield 21.2 bu.	34%, Yield 22.4 bu.
Percent Solid beans not Cultivated	28%, Yield 23.9 bu.	60%, Yield 19.3 bu.	66%, Yield 21.5 bu.
Increase for Cultivating	1.0 bu.	1.9 bu.	.9 bu.
Percent Solid beans cultivated —			
once	44%	61%	68%
twice	43%	32%	26%
thrice	13%	7%	6%
Implement Used Cultivating Solid Beans.			
Rotary Hoe	68%	74%	64%
Harrow	30%	14%	27%
Weeder, or Cultipacker	2%	12%	9%
Planter used for Row Beans:			
	Percent Width Yield	Percent Width Yield	Percent Width Yield
Corn Planter	75% 39 in. 24.8	92% 39 in. 21.6	57% 38 in. 20.9
Grain Drill	16% 27 in. 26.7	5% 24 in. 23.6	23% 24 in. 24.4
Beet and Bean Drill	9% 24 in. 27.4	3% 21 in. 26.8	20% 21 in. 26.9
Yields for Wide, Medium and Narrow Row-Widths:			
	Illinois	Indiana	Ohio
Wide, 38 to 42 in.	24.4 bu.	21.4 bu.	21.8 bu.
Medium, 30 to 36 in.	27.0 bu.	22.2 bu.	24.3 bu.
Narrow, 18 to 28 in.	26.6 bu.	25.5 bu.	25.7 bu.
Number of times row beans were cultivated:			
Once	7%	7%	18%
Twice	39%	33%	36%
Thrice	54%	60%	46%
Cultivating Implement Used on Row Beans:			
	Illinois	Indiana	Ohio
Cultivator	62%	60%	59%
Rotary Hoe	25%	31%	30%
Harrow	12%	6%	7%
Weeder	1%	3%	4%
Varieties:			
	Illini 70%-25.1 bu.	Richland 40%-21.3 bu.	Manchu 38%-22.3 bu.
	Richland 13%-23.9 bu.	Dunfield 26%-21.0 bu.	Richland 30%-21.8 bu.
	Dunfield 5%-24.9 bu.	Mandell 18%-18.8 bu.	Dunfield 12%-21.8 bu.
	Lincoln 3%-27.0 bu.	Manchu 6%-19.3 bu.	Mandell 7%-20.3 bu.
	Mandell 2%-24.3 bu.	Illini 4%-20.3 bu.	Mingo 4%-21.4 bu.
	Mukden 2%-23.8 bu.	Lincoln 3%-26.1 bu.	Illini 2%-20.7 bu.
	Chief 2%-27.6 bu.	Mukden 2%-22.8 bu.	Scioto 2%-24.0 bu.
	Others 3%-21.8 bu.	Others 1%-19.7 bu.	Others 5%-22.1 bu.
Yield on Soil Types:			
	Dark 49% 26.6 bu.	20% 23.3 bu.	26% 24.2 bu.
	Mixed 46% 23.8 bu.	72% 20.5 bu.	61% 21.2 bu.
	Light 5% 19.6 bu.	8% 19.0 bu.	13% 20.6 bu.
Soil Preparation:			
	Plowed 83% 25.1 bu.	95% 21.4 bu.	83% 22.4 bu.
	Discd 17% 23.6 bu.	5% 19.7 bu.	17% 22.1 bu.
Gain for plowing	1.5 bu.	1.7 bu.	.3 bu.
Seed Inoculated:	87% 24.9 bu.	73% 20.9 bu.	88% 21.8 bu.
Seed Not Inoculated:	13% 24.8 bu.	27% 19.9 bu.	12% 21.4 bu.
Gain for Inoculation:	.1 bu.	1.0 bu.	.4 bu.
Planting Date: In 1944, at least, planting date had little effect upon yield for plantings made anytime from the first week in May to the last week in June.			
Place of Soybeans in the Rotation:			
Preceding Crop			
Corn	80%	77%	55%
Soybeans	13%	10%	25%
Others	7%	13%	20%
Following Crop			
Corn	57%	21%	15%
Soybeans	14%	10%	19%
Oats	25%	31%	33%
Wheat	1%	32%	25%
Others	3%	6%	8%
These crop sequence data indicate that a cropping scheme of corn, soybeans, small grain, is followed by about one-fourth of the farmers reporting in Illinois, by about two-thirds in Indiana, and by more than one-half in Ohio.			
	Illinois	Indiana	Ohio
Percent Fertilizing Soybeans	7%	20%	21%
Average Pounds per acre	150 lbs.	105 lbs.	157 lbs.
Percent of fertilizer broadcast	21%	14%	22%
Percent of fertilizer in rows	71%	77%	71%
Percent of fertilizer plowed down	8%	9%	7%
Results from the use of fertilizer:			
Percent reporting, good	76%	56%	51%
fair	13%	11%	10%
poor	5%	18%	27%
unknown	6%	15%	12%
Percent growers owning combines:	54%	45%	49%
Percent 5 and 6-ft. combines:	60%	72%	77%
Percent combines that scatter straw:	91%	73%	88%
Percent that leave straw in bunches	9%	27%	12%
Date Soybeans Were Harvested:			
September	5%	22%	17%
October	91%	73%	73%
November	4%	5%	10%
Percent Growing Lincoln Variety in 1945:	39%	24%	14%

supply unless these bacteria are present in sufficient quantities. Growers in Ohio quite generally inoculate. Eighty-eight percent of them inoculated in 1944 although the increase in yield for inoculation was only .4 of a bushel per acre.

Table 3 indicates that the soybean has a long planting season. It appears that, in 1944 at least, there was very little difference in yield due to planting date for the eight weeks of May and June. However, date of planting records for other years definitely show a reduction in yield for mid-season varieties when planted much after June 1, while the yield of early maturing varieties is usually not much effected by planting date any time in May or June.

TABLE 3. Yields Based on Various Planting Dates

Planting Dates	Number of Growers Reporting	Percent Planted	Yield
May —			
1st week	19	1.3	23.3
2nd week	62	4.2	21.4
3rd week	200	13.5	21.6
4th week	281	18.9	21.3
June —			
1st week	393	26.5	22.4
2nd week	351	23.7	21.6
3rd week	132	8.9	21.6
4th week	34	2.3	20.8
July —	12	.8	20.8

The place of soybeans in the rotation is always a moot question. These growers were asked to name the crop which preceded soybeans and the crop which would follow the soybeans. Both the preceding and following crops are listed in Table 4. While this does not, of course, show the entire rotation scheme, it does show the place where soybeans occur in the rotation.

Corn seems to have preceded soybeans in about 55 percent of the fields and to have followed the soybean crop in only 15 percent of the fields. Soybeans preceded soybeans on one out of four fields and followed soybeans on one out of five. Oats followed soybeans in one-third of the fields and wheat in one-fourth. Thus a rather definite crop sequence of corn, soybeans, small grain is indicated on about one-half of the farms.

TABLE 4. Preceding Crops and Following Crops

Preceding Crop	Number of times	Percent of total
Corn	732	49.5
Corn, Soybeans	148	10.1
Corn, Oats	9	.6
Corn, Clover	8	.5
Corn, Wheat	7	.5
Soybeans, Oats	2	.1
Soybeans	292	19.7
Oats	62	4.2
Oats, Wheat	6	.4
Wheat	33	2.3
Clover, Hay	91	6.2
3 or More Crops	12	.8
Others	76	5.1
	1479	
Following Crop	Number of times	Percent of total
Corn	169	11.4
Corn, Soybeans	36	2.4
Corn, Oats	33	2.2
Corn, Wheat	22	1.5
Soybeans	220	14.9
Soybeans, Oats	66	4.5
Soybeans, Wheat	32	2.2
Oats	367	24.9
Oats, Wheat	125	8.5
Oats, Hay	5	.3
Wheat	276	18.7
Clover, Hay	26	1.8
3 or More Crops	20	1.4
Others	79	5.3
	1476	

One out of five growers fertilized the soybean crop, the average application was 157 pounds to the acre. Seventy-one percent of the fertilizer was applied in the rows, 22 percent broadcast and seven percent plowed down. Fifty-one percent of the growers who use fertilizer said the results were good, 10 percent fair, 27 percent poor and 11 percent gave results as "unknown".

One out of three fields were fertilized in Delaware, Huron, and Sandusky Counties, while only one grower out of 52 used fertilizer in Paulding County. The brands of fertilizer used indicate that most growers fertilizing soybeans favor the kind they have been accustomed to use on the corn crop.

One-half of the growers own combines and 88 percent say that the combine scatters the straw. The balance say their straw is left in bunches. Combine manufacturers should carefully study the proper disposal of soy-

bean straw as it comes from the combine. A great many farmers complain about the difficulty of plowing down soybean straw. Table 5 shows the popularity of the 5 and 6 foot cuts, more than three-fourths of the combines are of these two sizes.

TABLE 5. Number and Size of Combines Owned

Width of cut in feet	Number of each size
3 1/2	26
4	52
5	292
6	234
7	13
8	28
9	2
10	12
12	21
Total	680

Seventeen percent of the soybean crop was harvested in September, 73 percent in October and the remaining 10 percent in November.

Urge Higher Yields

AT OHIO MEETING

Average soybean yield in at least one state could be increased from 19 bushels per acre to 25 bushels without adding to the per-bushel cost of production, in the opinion of D. F. Beard, extension agronomist at Ohio State University, Columbus.

Beard set forth an eight-point plan for raising production at the sixth annual conference of processors and agronomists on soybean production and utilization, which was attended by soybean experts from six states on March 15.

The agronomist's suggested plan for improving Ohio production included:

Planting one to two weeks earlier than has been done; use of the best available varieties; use of tested seed of high germination; proper preparation of the seed bed; seeding at the optimum rate and inoculation; adoption of good fertility practices; weed control, and harvesting of the crop without delay.

Opening address of the conference, "The Processor Looks at the Future," was delivered by Edward J. Dies, Washington, D. C., chairman of the board of the National Soybean Processors Ass'n (See page 17).

C. C. Allison, extension plant pathologist at Ohio State University, spoke on soybean diseases in Ohio, and Lewis C. Saboe, assistant agronomist of the USDA at Ohio State and program chairman, addressed the meeting on the topic, "Can There Be Better Soybean Varieties for Ohio?"

"At present price relationships the soybean acreage may be expected to decline in Ohio," reported J. I. Falconer, department of rural economics, Ohio State University. "Farmers have found that their fields are becoming infected with weeds, they would

like to grow more meadow crops where weeds can be better controlled. Continuous cropping with corn, soybeans, and small grains is having its effect upon the productivity of the soil. At present price relationships soybeans will probably be the first grain crop to be reduced in acreage in order to make room for a greater acreage of sod crops. With the more general use of the corn picker the labor requirements of corn and soybeans are coming closer together, and thus some of the advantages of soybeans over corn in these days of labor shortages is being lost."

During a round-table panel, R. B. Alsbaugh, vice president of the soybean division of the Drackett Products Co., Cincinnati, Ohio, discussed "Problems That Confront Processors."

"If we can get into the hands of farmers, authenticated scientific information on all phases of cultural practices for soybeans," Alsbaugh said, "we will have moved in the right direction to establish the soybean industry, so far as one phase of it is concerned, on a sound basis."

Other contributors to the panel were J. A. Slipper, extension soil conservationist, Ohio State University; R. E. Yoder, chief of the department of agronomy, Ohio Agricultural Experiment Station; H. S. Byrd, Swift & Co. manager, Fostoria, Ohio; R. D. Lewis, chairman of the department of agronomy, Ohio State University; and J. W. Calland, director of agronomic research, Central Soya Co., Inc., Decatur, Ind.

Chairman of the morning session of the conference was President H. E. Carpenter of the Berea Milling Co., Lexington, Ohio; and for the afternoon session, Mr. Beard.

THE PROCESSOR

Looks at the Future

● Address by Edward Jerome Dies, chairman of board of National Soybean Processors Association, and chairman of board of Soy Flour Association, at sixth annual conference of agronomists and processors at Ohio State University, Columbus, March 15.

By EDWARD JEROME DIES

A DECADE ago when more and more capital began venturing into the soybean business there were many doubters on the sidelines. They smiled indulgently. This was not venture capital, they said. This was bold reckless speculation, a hazardous gamble. They called it a blind bet on the dim and doubtful unfoldment of a new industry.

Down through the years, since the landing of the Pilgrim Fathers, since the first scratching of stony New England soil, we had gotten on quite well without the soybean. It could contribute little if anything to our economic progress. It was a whim, a freak, and a fantasy.

Thus spoke the doubters in the early years of expansion.

Yet most of them lived to become converts... some of them enthusiastic advocates of the soybean.

They had watched the vast producing garden widen and thicken across the Cornbelt. They had watched it creep to the north and to the south, the east and the west. They had observed an immense flow of prod-

ucts in ever-swelling volume pour into the feed and food channels of this country and help to feed the armed forces and the hungry millions in foreign lands. They saw the industry become a 500 million dollar annual business.

Now there was left little margin for doubt. In fact we have been told repeatedly that without the great protein output which we provided, the war food program would have been seriously retarded. And without our tremendous volume of vegetable oil, the domestic and world fats and oils shortage might have proved a greater tragedy.

"But," we still hear men say, "all this expansion really came about as a consequence of the war."

The answer here is an emphatic no. Evidence is indisputable that the soybean had made its stand, won its laurels, and taken its place as a major cash crop, definitely and unchallenged, before the war began. It shall never relinquish its position. The facts are too plain, the proof too abundant to admit of future doubt.

The soybean industry is here to stay.

Those of us who spend most of our time in Washington and observe closely the trend of government are conscious of a gradual shift in some of the basic factors of economy. There is a shift in social thinking, arising from the masses, and would be plainly evident regardless of party in power. There is a straining toward higher standards of living in so-called normal times. The war has accentuated this movement. For during the war period, with its high wages and general prosperity, the population as a whole has been better fed, the average caloric intake has been substantially higher, the large numbers in the lower income brackets have

been better dressed and have had more of the necessities of good living than in a long period of time.

Determination is everywhere evident that such higher standards of living, with broad-scale employment, large production, large consumption of food and consumer goods, shall be retained.

All of which would mean greater farm production, continued rural prosperity, and increased domestic consumption of food supplies, if such aims are realized on a sound economic basis, with no skidding into foreign socialistic ideologies, but with solid adherence to our own constitutional principles of freedom and personal initiative.

NEW FOOD FRONTIERS

There still are new frontiers in agriculture.

They are tied in with increased food consumption and higher standards of living.

If there are brighter years ahead for agriculture, based on heavier domestic consumption and the needs of foreign lands, then the outlook for the soybean takes on a new patina of promise.

At no time since the development began has any of the three major products — meal, oil and flour — failed to find a ready market. The cold fact is we never have produced a crop large enough to bog down the swelling demand for the products. In the war period, of course, we have had to spread supplies across the nation under various government allocation orders.

People do not buy one product from a field of competitive products without some compelling reason. Soybean products moved into the market more and more abundantly through sheer merit. It is through sheer merit too that they have held and broadened their base.

Today soybean oil meal is by far the most important oilseed meal from the standpoint of production. It has reached the surprising level where it constitutes 50 percent of all the oilseed meals produced. Indeed, it is deemed so valuable as a protein source that many farmers have decided to raise more

Speakers at the sixth annual conference on soybean production and utilization at Ohio State University March 15 included, left to right, H. E. Carpenter, president of the Berea Milling Co., Lexington, Ohio; J. A. Slipper, extension soil conservationist, Ohio State University; J. W. Calland, director of agronomic research, Central Soya Co., Inc., Decatur, Ind.; R. D. Lewis, chairman, department of agronomy, Ohio State University; E. J. Dies, chairman of the board of the National Soybean Processors Association, Washington, D. C.; H. S. Byrd, manager, Swift & Co., Fostoria, Ohio; R. B. Alsbaugh, The Drackett Products Co., Cincinnati, Ohio; Lewis C. Saboe, assistant agronomist, USDA, Ohio State University, and D. F. Beard, extension agronomist, Ohio State University.



soybeans to help assure an adequate supply of the product in their respective districts.

A million dollars spent in advertising could not have done for soybean oil meal what the war has done. For the war taught farmers that it is highly profitable to use this protein in their rations. Today that knowledge is almost universal.

Most versatile of the oilseed meals, soybean oil meal has sufficient high quality protein so that it can be used to splendid advantage in various critical rations. Poultry and swine require critical rations because they must depend on the rations for pre-formed proteins of high quality. Soybean

oil meal competes with animal and marine proteins. This contrasts with other oilseed meals which do not have protein of such quality. The product finds ready outlet in poultry and swine rations. It is a popular ingredient in dairy feeds. In fact, during 1944 it accounted for about 40 percent of all the oilseed meals consumed by dairy cattle. That ratio probably also obtained during the past year.

Some people have asked whether the supplies of oilseed meals will not be excessive later on when war-created needs have been met. No one yet, not even our most brilliant economists, has been able to chart future requirements to a nicety. But if there is a higher standard of living, greater food consumption, and wider use by farmer and feeder of protein meals as a profit incentive, then over-supply seems a long way off.

One more factor might be mentioned here. It concerns our good friends in the Cotton-belt. Cotton is a problem, a serious problem. Today there is a mountainous world carry-over. On August 1, last, there were 11 million bales of cotton in U. S. warehouses and a like carry-over at the beginning of the year. Prices have been around 27 cents a pound on the New York Cotton Exchange, as against 5 cents a pound to the grower in 1932. By loan, subsidy and parity program prices have been lifted. The higher the price, the less cotton seems to have moved. Production was rising in India, Egypt and Brazil preceding the war, and in recent years synthetics have been getting cheaper and better and cutting deeper into the cotton market.

PROBLEM OF COTTON

Can the South go on raising bumper cotton crops? What is the answer here? If it cannot, then a greater responsibility falls to soybeans and other oilseed meal crops. The new forceful South, which has a brighter industrial outlook than ever before, and which has made progress along various agricultural lines, is alive to the cotton problem. In fact some studies are being made as to the possibility of growing a plant with more seed and less cotton. But this appears to be a rather dim and distant prospect.

A dramatic story will be written some day on the struggle that has been made to meet the painful war-time fats and oils shortage that extended around the globe. It still is with us and may remain as long as 2 years, in the opinion of some able Washington authorities.

In the field of vegetable oils, the greatest burden once more fell upon the soybean. But here again the product proved its superior merit and has been channeled into many uses where it had been second choice, but where it is now permanently entrenched.

Even before the war most soybean oil was finding ready outlet in the edible trade. Yet there is awaiting this product a huge outlet in the paint and varnish and other industrial fields when and if the time arrives

that the requirements of the edible trade have been met.

In the past 10 years there has been no business day when there was not a ready market for soybean oil. Sometimes the price was too low for a processing profit, but there always was a buyer. And so it will be in the future.

ARE SOLVING REVERSION

Soybean oil's final problem in the food trade—a slight tendency toward reversion—now is being solved by various public and private laboratories. A meeting of scientists from various organizations working on this problem will be held next month for a comparison of results to date.

The third major product of the soybean, soy flour, is small in dollar volume compared with meal and oil. But it has made its own successful stand and had been accepted as an ingredient in a long list of food products before the war began.

During the war this list expanded. Soy flour has been used in the rations of the armed forces, has been siphoned into Europe through lend-lease and UNRRA, and now is being included in the bread and other basic food products of a number of foreign countries. Many bakers use it in white bread up to 3 percent in this country while others use it in labeled soy bread in much larger proportions. It has been recognized and accepted by the Bureau of Animal Industry as a binder for sausage in federally inspected houses up to 3½ percent, and is used in meat loaves and in other meat products.

Like the other two major products its future is secure, and like them, too, it has been winning its place on sheer merit.

Culture and utilization of soybeans, says the Department of Agriculture, "satisfy certain requirements which no other crop fills, consequently they are becoming increasingly important in the organization of farming practices on Cornbelt farms."

Soybeans do indeed satisfy certain requirements—expanding requirements—and their products now touch the lives of most of the nation's inhabitants.

TO TAKE UP SLACK

If one district or one state does not grow enough to meet demands and, incidentally, reap the returns to grower, employees of elevators, processing plants, transportation systems and the like, then some other district or state will inevitably take up the slack, for the demand will be met.

The following table shows clearly how Ohio has done its part, for it ranks fourth among the four great producing states. Somewhat slower in getting started, Ohio's percentage of increase in soybean production in the past 10 years is substantially higher than that of the other three great producing

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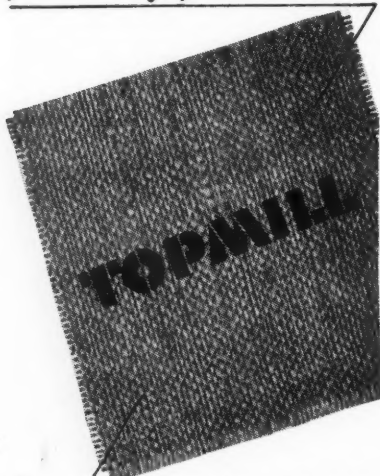
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Right now, with a shortage of cotton bagging, you can probably find additional uses for TOPMILL burlap bags. For example, feed, flour, seed, fertilizer and hundreds of other products can be packed in TOPMILL. Consult today with your Chase representative.



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states and stands at 766.9, against the U. S. increase percentage of 432 percent.

Production of Soybeans for Beans (In 1,000 bushels)

Year	Ohio	Illinois	Iowa	Indiana	U.S.
1935	2,604	24,012	6,600	6,970	44,378
1936	2,046	17,216	2,548	4,186	29,983
1937	3,249	27,040	4,236	5,797	45,272
1938	5,754	34,122	6,741	9,540	62,729
1939	10,164	46,354	11,562	14,430	91,272
1940	8,835	34,912	14,180	9,399	77,374
1941	13,143	49,098	16,014	13,855	105,587
1942	24,398	66,400	35,451	26,380	187,155
1943	27,468	70,438	38,512	25,956	193,125
1944	21,796	72,870	38,720	23,744	190,406
1945	20,072	74,100	34,848	27,924	191,722
% Increase —	766.9%	308.5%	528%	400.6%	432%

Source: Government reports.

Farmers will go on growing soybeans. The crop has established itself in the farmer's rotation program. It helps condition the soil for other crops grown in rotation. It can be grown profitably in competition with other major crops. The product has diversified uses and laboratories are extending the list. It is a cash crop harvested rapidly without interference with other crops. It stands up under bad weather and pests.

TOO MUCH ABOUT SOIL DEPLETION

Perhaps too much has been said about the soybean's soil depleting properties and not enough as to its virtues. One able observer has compared soybeans with other grain crops. He points out all farm crops remove mineral elements from the soil. Some crops store nitrogen in the soil and thus are deemed soil builders. The nitrogen storing capacity of soybeans is not large. But when compared to the nitrogen loss from plantings of corn, oats and wheat, it is important. The Ohio Station, after a complete investigation, has given soybeans a numerical value of minus one-half in a scale where corn ranks -2, wheat -1, oats -1 and clover plus 2. By such a ranking soybeans are only one-half as soil depleting as wheat and oats and only one-fourth as soil depleting as corn.

Mark up one more admirable feature. Crops following soybeans often show higher yields, indicating a residual improvement in the soil as a result of soybean planting.

Iowa Experiment Station, for instance, reports that corn yields 8.3 and 9.5 bushels more following soybeans than when corn follows corn on the Webster and Clarion soils of that state.

In a 25-year-old crop rotation experiment at Purdue Experiment Station where a rotation of corn, wheat, clover was compared with corn, soybeans, wheat, clover, the soybeans in the rotation increased the yields of corn and wheat by 6 and 7 bushels, compared to no soybeans used in the rotation.

Illinois reports that soybeans not only improve the tilth of the soil but also increase the biological activity and the amount of nitrate nitrogen in the soil.

More evidence is available proving the soybean is not the villain some would have us believe.

Today in nearly all parts of the world the food and feed situation is bad. In many parts it is desperate. Proteins and fats and oils—the two great products of the soy-

bean—have been short to the point of tragedy.

This induced the Secretary of Agriculture to announce officially a 1946 support price of \$2.04 a bushel, after some weeks of delay during which a lower price was under consideration. The emergency is still at hand and it is hoped all soybean growers will do their part.

We have ample processing facilities for any crop produced. Despite the fact that the soybean is deeply entrenched in our economy, processing facilities are overbuilt for peace times and it may take some years for production to catch up with processing capacity. Through the years processing capacity has kept ahead of production.



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\$10
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by inoculating your Soybean Seed every year. Uninoculated Soybeans may produce a good crop on good land, but they'll take the valuable nitrogen from the soil, at a cost to you of at least \$10 per acre per crop. Take this nitrogen from the air and you'll actually save this \$10.

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3 Cultures in 1 Can for
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REPORT OF PROSPECTIVE ACREAGE

Smallest Since 1941

The prospective acreage of soybeans to be planted *alone for all purposes* this year is about 12 percent less than in 1945, reports the U. S. D. A. crop reporting board. This year's indicated total of 11,840,000 acres planted alone for all purposes compares with 13,412,000 acres last year, and is the smallest since 1941. However, the indicated acreage for this year is still well above the 10-year average of about 10 million acres. All producing areas report reductions from a year ago, with the sharpest reduction expected in the heavy-producing North Central States.

Much of the increase in acreage which has taken place the last few years, was brought about because of the acute need for soybeans as a war crop. The need is still great for soybeans for oil and protein feed, but many farmers feel that they should return to a more normal crop rotation. Soybeans also have been grown in some areas of nearly all states not entirely suited to the crop and in such areas there are marked reductions in the prospective acreage.

In the North Central States, where more than 80 percent of the total acreage "alone" is grown, prospects are for a decrease of about 13 percent from last year. Ohio, Indiana, Illinois and Iowa all show prospective reductions ranging from 12 to

15 percent. In Missouri, where the acreage has been expanded rapidly, a sharp reduction of 18 percent from last year is intended. Michigan, with a relatively small acreage, indicates a drop of 20 percent. Minnesota shows the opposite trend, with an increase of 10 percent in prospect. Here the 1945 crop turned out unusually well, whereas much of the corn crop was damaged by frosts. Increases are also expected

in the minor producing states of North Dakota and South Dakota.

If about the same proportion of the total acreage of soybeans is harvested for beans as the 1944-45 average, the acreage for beans would be slightly under 9½ million acres. If such an acreage is harvested for beans and growing conditions this season permit state yields for beans about equal to the 6-year (1939-44) average, the 1946 production of soybeans for beans would be about 170 million bushels. A production of this size would be the lowest since 1941 and about 12 percent less than the 191¾ million-bushel crop produced in 1945.

Swift's Soybean Oil Meal



Swift's Soybean Oil Meal makes all livestock and poultry say "Wow! What good feed!" And so feed manufacturers, feed mixers and feed dealers prefer it in their mixed feeds. You'll find it will help build your business by bringing in new customers and repeat orders from old ones. Remember (1) it's a good source of high-quality proteins and other important nutrients. (2) It adds taste-appeal to all mixed feeds. (3) It gives the right balance to your formulas. (4) It is always uniform in quality and gives dependable results.

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SOYBEANS — Acreage planted*

State	Average 1935-44	1945	Indicated 1946	1946 as percent of 1945
Thousand Acres				
N. Y.	17	9	9	100
N. J.	32	35	25	71
Pa.	75	71	67	95
Ohio	376	1261	1072	85
Ind.	1258	1705	1500	88
Ill.	2931	4130	3552	86
Mich.	123	140	112	80
Wis.	152	94	85	90
Minn.	213	518	570	110
Iowa	1376	2013	1731	86
Mo.	516	862	707	82
N. Dak.	—	7	9	129
S. Dak.	113	19	25	129
Nebr.	27	25	21	85
Kans.	119	295	266	90
Del.	50	55	55	100
Md.	69	77	75	97
Va.	146	162	149	92
W. Va.	50	32	26	81
N. C.	340	368	331	90
S. C.	35	28	25	90
Ga.	96	85	76	90
Ky.	165	180	162	90
Tenn.	189	223	201	90
Ala.	278	261	235	90
Miss.	342	247	235	95
Ark.	258	386	401	104
La.	95	99	98	99
Okla.	19	16	14	88
Tex.	30	9	6	70
U. S.	9,886	13,412	11,840	88.3

*Grown alone for all purposes. Partly duplicated in hay acreage.
†Short-time average.



The Meat Without a Bone

Soy Curd, the boneless meat of millions of Oriental people, shown in a small Korean market.

THE VERSATILE soybean is truly an ancient food with a modern touch. Today science has made it possible to add some form of soy to almost every type of food and we may meet this modern touch in everything from appetizers to chocolate sodas without suspecting its presence. One ancient form of the soybean that is yet unchanged is soy cheese or bean curd made from the dry beans. It is the soft custard-like substance so often found in Chinese soups and stews or added to their meat and gravy. To anyone interested in unusual foods soy cheese is indeed fascinating. While it will never become popular in this country it is worth knowing about and trying at least once.

Soy cheese or curd is known to the Chinese as *tofu* and it has aptly been described by them as "the meat without a bone." It has been a common food in the diet of the Chinese and Japanese for centuries and the fresh cheese can always be secured in sections of the country with a high Oriental population. *Tofu* is sold in their markets, served in their homes and restaurants, but the average American knows nothing of its manufacture, sale or use.

The bean curd or soy cheese is the coagulated casein of the soybean and is made from soy milk very much as we make cottage cheese. The result is a white, very soft, watery substance, that can be pressed into a cake or soft cube. It is an easily digested food, fairly high in protein, and can be used as a meat, egg, or fish substitute, as a cheese, or as a topping or dessert.

Every Oriental settlement has its *tofu* factory or factories which supply the restaurants and markets with fresh cheese. The methods used in some of them are very crude and primitive but the result is an excellent cake of cheese. There is an interesting little place in the heart of new Chinatown in Los Angeles run by two old Chi-

nese who claim no knowledge of English, and can't be bothered with curious visitors. They did, however, allow me to watch from a distance. A large size coffee mill run by a little motor ground the beans. The curds were cooked in a clean wash tub and the cakes were pressed between two boards held down by a wooden bar which was attached to the wall at one end and weighted at the other end with a pail of sand. Naturally their output was limited but their product was excellent. Here was the old world working in the midst of the new making an ancient food that was yet new and novel.

To make the cheese the dry beans are finely ground and made into soy milk. Often a small stream of water is run into the mill as the beans are ground. This liquid is then heated and allowed to curdle. The best results are obtained when a small amount of mineral salts or acid is added. After the curds are formed, all liquid is run off, and the curds are pressed into cakes in cheesecloth. The size of the cakes varies. It may be a soft cube of 4 inches, or a cake only 1 or 2 inches thick.

As the fresh cheese is perishable it must be kept under water or in the refrigerator. The soft cakes are usually sold from a tin box filled with water and the clerk fishes out a cake as skillfully as possible, transferring it to an oyster bucket or lard tray where it continues to drip. If the container is not waterproof a trickle of water soon escapes from the package much to the distress of the customer. The fresh cheese may be kept two or three days in the refrigerator before using. If allowed to stand for 10 days or more an interesting pink mold develops and the cake has an odor very much as that of decaying meat.

Fresh *tofu* may be used cooked or raw depending on the individual taste. As it is watery and tasteless it definitely needs pepping up in some way for flavor. Cooking

By MILDRED LAGER
Author of "The Useful Soybean"

removes part of the water, making it more solid in texture and easier to handle. The whole cake may be steamed or it may be tied in cheesecloth and cooked in water for about 15 minutes. It may then be sliced, dipped in batter and fried or just browned in fat and served with a tasty sauce. Many vegetarians use it this way in place of meat or fish and season it with some meat-like flavoring. The slices may also be baked in tomato juice or tomato sauce. Cut into chunks the cheese may be prepared as scrambled eggs. *Tofu* croquettes are a specialty in many vegetarian restaurants and they are always very popular if properly seasoned and prepared. Small pieces of cheese may be added to gravy or pot roast just before serving. One Chinese restaurant in Los Angeles serves it this way and it is one of their most popular dishes.

EATEN AS DESSERT

Persons who have developed a taste for soy cheese or who use it because of its food value, often eat it raw. Mashed, sweetened and flavored to taste it becomes a dessert. With added coconut it is often served as a topping or with fresh or baked fruits. Some ingenious cooks even use it for cheese cake.

But very little of the fresh soy cheese is used by the white race, in fact only the food curious know that it exists. Canned soy cheese is more in demand, partly due to the fact that it is ready prepared and is available in all sections of the country. In spite of its limited use soy cheese is canned by a few concerns specializing in soy products and meat substitutes. Canned it is known as soy cheese, soy food or soy curd and the taste, texture and moisture varies with the different brands. It is often on the order of dry cottage cheese flavored with soy sauce, meat-like seasoning or *pimientos*.

Canned soy cheese may be used as any soft cheese for sandwiches, salads, stuffed tomatoes etc. It can be added to dressings, sauces and gravies. Sliced and heated it becomes a protein entree and again the flavor is greatly improved by the addition of onions, garlic or tomatoes. Added to beaten eggs, the canned cheese can be made into a delicious fritter.

Soy cheese will never become a popular food in this country. A certain amount will always be used, however, by the vegetarian, especially by those who do not use any animal products whatsoever, and by those who have developed a taste for it. It is an unusual food that does not appeal to everyone. It is becoming more and more popular in corrective nutrition because it often fills a need in the special diet.

"The meat without a bone" is one of the interesting variations of the versatile soybean. This ancient food is gaining a toe hold in our American diet and is filling a dietary need for many persons.

SEEK VARIETIES FOR TROPICAL AMERICA

United Fruit Co.'s research department has made experimental plantings of soybeans in tropical America to prove or disprove them as a valid crop for citizen farmers there, reports Middle America Information Bureau. From work reports made out in 1943 by Dr. V. C. Dunlap, director of the department, and his associates, the following procedures and results were noted.

"Small plots of seven varieties were planted during the year, several of which show promise. We have concentrated so far on building up a seed supply and have obtained a total of 178 pounds of seed from a very small beginning of 4 pounds. Of this total 43 pounds have been distributed to various individuals for trial, 50 pounds were recently planted and 85 pounds are carried in our seed stock for future planting.

"Our observations to date, based on limited plantings, show excellent growth and yield on fairly heavy soil in the dry season where irrigation facilities are available. Good results were also obtained during a moderate rainy season. Best results require considerable cultivation. Some traces of mosaic disease were noted and would probably be a factor to be considered in large plantings.

"We are awaiting a shipment of several hundred pounds of selected Santo Domingo seed with which we will undertake plantings

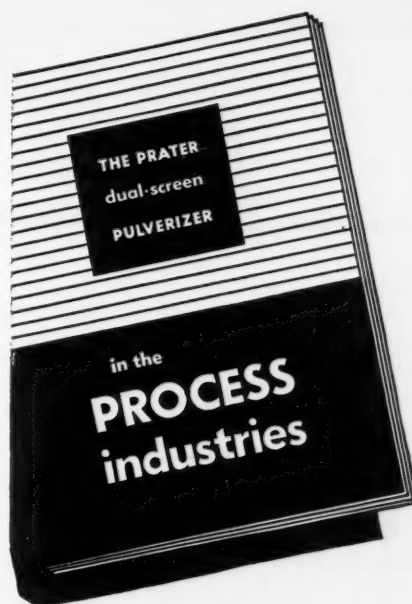
on a larger scale. Varieties which flourish in the United States are in general not suited to areas south of the Rio Grande. We are, therefore, obliged to build up our own seed material."

— s b d —

USE OF FERTILIZERS IN MISSISSIPPI

Soybeans, cowpeas and lespedeza do not respond as well to fertilizers as many of the non-leguminous crops such as cotton, corn, and oats, reports *Mississippi Farm Research*. When grown on rather fertile soils, or soils which have been fertilized heavily in the past, these crops may not respond to fertilizer. In most cases where these crops are grown on the average soil, they do respond well to phosphate. It is, therefore, recommended that 100 to 200 pounds of superphosphate or 250 to 500 pounds of basic slag be used on these crops.

Where soybeans, cowpeas, and lespedeza are grown year after year for grain and the stubble is returned, the soil is not robbed of its nutrients as quickly as it would be if all of the plant material were removed for hay; where these crops are continuously removed for hay, large amounts of potash are removed from the soil. In order to maintain the fertility of soils growing hay and to produce maximum crops, muriate of potash should often be applied along with superphosphate.



PRATER BOOKLET

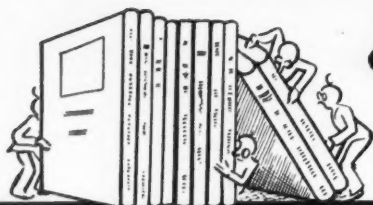
The new booklet, "Prater Dual Screen Pulverizers in the Process Industries," treats in a specialized way with the soybean industry, as well as the distilling, packing and ceramics industries, covering both the construction and application of the equipment. Copies may be obtained by writing the Prater Pulverizer Co., 1825 S. 55th Ave., Chicago 50, Ill.



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Publications

China

CHINESE TRAITS IN EUROPEAN CIVILIZATION: A STUDY IN DIFFUSION, by Paul Frederick Cressey, Wheaton College, Mass., in *American Sociological Review*, Oct. 1945.

Soybeaners all know that we are in-

debted to China for the soybean. Do you know that the following items and processes also came originally from the same country: lacquers, tea, printing, paper, silk, peaches and apricots, gunpowder, grapefruit, the compass, paper and kite?

China has been piping bits of culture into Europe for over 2,000 years. And lately, to the Americas, to our enrichment.

The soybean has been the only major importation from China in the 20th century. The author says it was first brought to France in 1740, and from there the first seeds were sent to the U. S. by none other than Benjamin Franklin. (If it is true that Franklin was responsible for first importation of the soybean, it is a fact not recorded by our earlier writers on soybeans, who report the first mention of soybeans in the United States was in 1804.)

Dr. Cressey quotes a U. S. Department of Agriculture expert as believing that China will continue to be the chief donor of new crop plants and foods, and of new dietetic uses for vegetable foods to the U. S. He points out that China has the largest array of crop plants and flora of any temperate zone region of the whole world.

Industry

SOYBEAN SIZE IS EASY TO APPLY AND REMOVE, by I. G. Sanford. *Textile World*, October 1945.

Acetate rayon weavers have been turning to a soybean size to overcome shortages of other sizing materials such as gelatin, casein or synthetic size, and have found that it offers certain advantages over the standard sizes.

Probably the most outstanding difference found when using this new size is that slasher-cylinder temperatures need not be watched so closely as with other types of size. Tests have shown that it is virtually impossible to bake the size or overheat it within the normal range of temperature generally found on slashers. It has been found that there is little or no danger of causing the size to deteriorate or become insoluble.

One of the principal problems in slashing acetate yarn has been penetration. Test runs and cross-sectional photomicrographs have shown that one of the advantages of a soybean protein size is its ability to penetrate acetate yarn.

The size does not tend to form a gum and does not gel on cooling.

Since the size comes from a plentiful

source it is proving of real help to the acetate rayon industry.

CATALYTIC CONJUGATION OF LINSEED AND SOYBEAN OILS, by S. B. Radlove, H. M. Teeter and J. C. Cowan, *Bulletin AIC-101*, Northern Regional Research Laboratory, Peoria, Ill.

It is recognized that the superior drying properties of tung oil are due to the presence of conjugated isomers of linolenic acid. In the hope of securing similar drying properties in linseed and soybean oils, attempts were made to convert the linoleic and linolenic acids occurring in combination in linseed and soybean oils into their conjugated isomers.

This report discloses the details of a successful method for neutral catalytic isomerization, and discusses the properties of the finished oils obtained.

Nutrition

EFFECT OF SOYBEAN PHOSPHATIDES ON VITAMIN A METABOLISM, by Charles A. Slanetz and Albert Scharf, Department of Animal Care, Columbia University, in *Journal of Nutrition*, Oct. 10, 1945.

Liver storage and blood levels of vitamin A in the rat were investigated as influenced by specific factors used as supplements in a purified basal diet containing synthetic B vitamins instead of yeast.

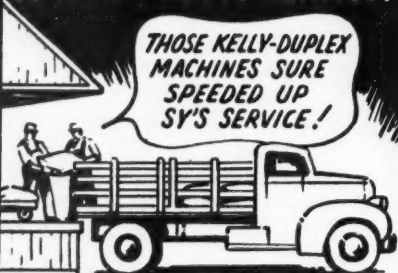
Under the conditions of the experiment commercial soybean lecithin markedly influenced storage and blood levels of vitamin A in the rat. Iodine interfered with this effect while heating of soybean lecithin interfered but little.

The presence of an unknown factor in commercial lecithin is indicated.

STABILITY OF SOYBEAN FLOURS. EFFECT OF ACCELERATED OXIDATION, by L. J. Filer, Jr., C. J. Martin, and B. F. Daubert, *Industrial and Engineering Chemistry*, December 1945.

Accelerated methods for testing soybean flour, flakes or grits for development of fat rancidity have been devised. Since soybean products may be stored for 1½ years or more before there is evidence of deterioration, these tests can be of help in evaluating commercial processing methods, and in studying methods proposed for retarding oxidative rancidity in soybean products.

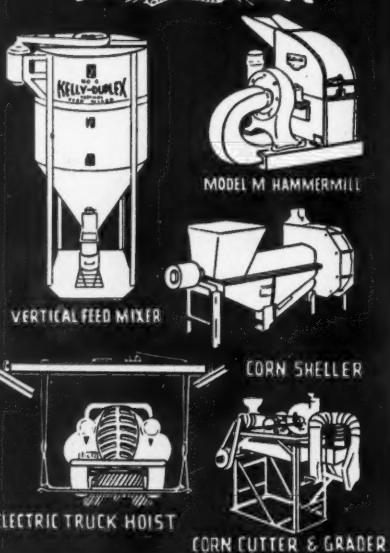
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MAY LEAVES BUREAU OF AGRICULTURAL AND INDUSTRIAL CHEMISTRY

Dr. O. E. May, chief of the Bureau of Agricultural and Industrial Chemistry, has resigned effective March 31 and will be succeeded by Dr. L. B. Howard, assistant chief of that Bureau. P. V. Cardon, Agricultural Research administrator, has announced. Dr. May is leaving the Department of Agriculture to become associated with a large corporation in an executive capacity.

Dr. May rose from the ranks in the Department, where he has served for the



MAY



HOWARD

last 23 years. He was the first director of the Soybean Products Laboratory at Urbana, Ill., and the first director of the Northern Regional Research Laboratory at Peoria, Ill., where present methods were developed for commercial production of penicillin.

Dr. Howard has been associated with the Bureau of Agricultural and Industrial Chemistry for 14 years. He was assistant to Dr. May at the Northern Regional Research Laboratory. He became assistant chief of the Bureau last November. He has had wide experience in searching, through chemistry, for outlets for the products and byproducts of the farm and is thoroughly familiar with that phase of the national farm program.

SOYS AND COTTON

I. M. Greer, Poinsett County, Ark., farmer, increased his annual cotton yield from an average of one-half bale to a bale per acre in 3 years through the use of soybeans, according to County Agent W. F. Wright.

Mr. Greer interplanted corn and soybeans on his cotton field, then hogged the corn and soybeans off, leaving as much manure and organic matter as possible on the land.

— s b d —

U. S. SOYBEAN OIL TO SYRIA AND LEBANON

The U. S. Department of Agriculture announces that 200 metric tons of soybean oil (a metric ton is 2,204.6 pounds) will be allocated for export to Syria and an additional 200 metric tons will be allocated for export to Lebanon in exchange for equal quantities of olive oil for importation into the United States.

These allocations are being made for the April-June quarter. Applications by private exporters for export licenses for the shipment of soybean oil to Syria and Lebanon should be sent to the office of international trade, Department of Commerce, Washington 25, D. C.

In addition to the export licenses issued by the Department of Commerce, the exporter will be required to obtain a certificate of subsidy clearance from the Department of Agriculture.

The Syrian and Lebanese governments will issue export permits to normal olive oil exporters at prices permitting importation into the United States with price ceilings established by the Office of Price Administration.

The Department of Agriculture stated that it will still consider authorizing exportation of a limited additional quantity of soybean oil to other countries in exchange for assurances from such countries that they will grant export permit for the importation into the United States of equal quantities of olive oil.



"This is the way one of our more recently acquired customers looked just before he contacted us. We admitted that *we do supply good stout bags for Soybeans, Meal, Feed and Flour*; and that our plants at New Orleans, Savannah, and Houston give good service. He was relieved, and we helped with the *best* solution to his problem, and thought we'd better remind you too —



"Think of Mente

When you think of Bags!"



MENTE & CO., Inc.

I. T. Rhea, Pres.

NEW ORLEANS HOUSTON

SAVANNAH

GRITS and FLAKES...

FROM THE WORLD OF SOY

Thomas W. Gilmore, large cotton planter and soybean grower, Sandersville, Ga., died March 13, according to word received here. Mr. Gilmore was a director of the American Soybean Association from 1936 to 1938.

* * * *

The property of the Indiana Cotton Mills at Cannelton, Ind., has been sold to interests representing Bemis Bros. Bag Co. Transfer was made April 1 without interrupting operation of the mill. Same personnel was retained.

* * * *

A new catalog of technical books has been issued by The Chemical Publishing Co., 26 Court St., Brooklyn 2, N. Y., and will be sent free on request. Latest books on chemistry, physics, science, technology, medicine, foods, formularies, drugs and cosmetics, engineering, metals, technical dictionaries, and building construction are included.

* * * *

The Southern Cotton Oil Co., Memphis, Tenn., has completed three new welded steel combination soybean and cottonseed storage tanks. These tanks were built under the supervision of W. B. Ware, superintendent.

* * * *

Seedburo Equipment Co., 223 W. Jackson Blvd., Chicago 6, Ill., is prepared to resume repair service on Tag-Heppenstall Moisture Meters, which due to shortage of parts and help was curtailed during the war.

* * * *

Col. Rohland A. Isker, commanding officer of the Army's Subsistence Research and Development Laboratory in Chicago since 1939, has left the Army to establish an advertising agency with Miss Frances Hooper. Recently Colonel Isker received for the Laboratory the War Department Service Award of Merit for its contribution to feeding of the armed forces.

* * * *

The New York State Food Merchants Association has urged that state's Congressmen to state their positions on the proposed repeal of federal margarine tax laws, which the Association terms "unnecessary and unjust." The association is particularly interested in H. R. 579 which would eliminate the \$6 license fee and the 10 cent per pound tax on colored margarine.

* * * *

R. W. Kanitz of the Nitragin Co., Milwaukee, Wis., is back on the job after a recent illness.

* * * *

The Rock Island Lines has announced the appointment of Wayne C. Gault as agricultural agent for the company, with headquarters in Kansas City, Mo. His territory will include Missouri, Kansas, Colorado, western Oklahoma, Nebraska and the Texas Panhandle. Mr. Gault has been production manager for the Finer Foods Packing Corp., Terre Haute, Ind.

* * * *

Allied Mills, Inc., has appointed Leo T. Murphy vice president in charge of plant operations at Omaha. Mr. Murphy has been with the company 25 years, the last 16 in charge of the Omaha feed and soybean plant and western alfalfa operations of Allied Mills.

* * * *

ELECTRIFIED INDUSTRY for March features the Soy-Rich Products Mill at Wichita, Kans., with two pages of pictures.

* * * *

The March 1 *Monthly Business Review* of the Federal Reserve Bank of Cleveland, Ohio, contains a discussion of the recent increase in soybean production and its causes, including profit margins and improvement in processing methods.

* * * *

A new talking slide film, "Waste Weazels," has been prepared by the Wayne feeds educational service division of Allied Mills, Inc., and is available without charge to extension workers and others interested in stretching feed supplies to the utmost. A 30-minute non-commercial film, it is designed to point out unnoticed but wasteful practices in feeding. For further information write Allied Mills, Inc., Ft. Wayne, Ind.

* * * *

Inactive during the war, the Missouri Chemurgic Commission has been revived. Two reorganization meetings, called by Howard Doane, were held during the National Farm Chemurgic Council sessions in St. Louis March 18-20.

* * * *

Two recent Glidden Co. appointments are Howard T. Gordon, administrative assistant to sales, and Raymond J. (Jack) Little, general superintendent of the feed mill division.

BURTON IS HEAD OF NITRAGIN RESEARCH

Major Joseph C. Burton has been appointed head of the laboratory and research department of the Nitragin Co., Milwaukee, Wis., it is announced.

Burton replaces L. W. Erdman, who has joined the Agricultural Research Administration at Beltsville, Md. The Nitragin Co.



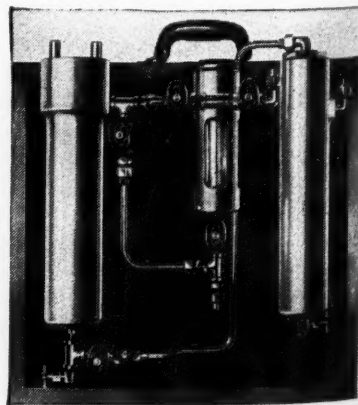
laboratory, where inoculating bacteria for legumes are produced, is the oldest of its kind in America.

Recently returned from the Philippines after 4 years of Army service, Burton rejoins the Nitragin Co., where he first came to do legume bacteria research in 1937. He was called by the Army in 1942.

Burton has had wide experience in research with legume bacteria and has published a number of scientific papers on the subject.

— s b d —

Below is the D-10 Dehydrator Unit developed by the Russell R. Gannon Co., Cincinnati, Ohio, for the armed forces during the war. The unit is applicable to many commercial dehydrating problems as it is capable of dehydrating compressed air lines with pressure up to 2,000 pounds per square inch.



SOYBEAN DIGEST



PROPER *Plant Layout* PROVIDES

- ★ MAXIMUM PRODUCTION
- ★ GREATEST ECONOMY

We have recently expanded our organization and facilities to give you immediate assistance in securing maximum production at minimum cost. Our chief engineer, P. F. McAllister, has over twenty-five years of actual experience in the feed and milling industry.

Our service consists of engineering the complete project, by having our senior engineers check the present equipment and processing flow. After obtaining this information, we have a conference with the management and supervision to discuss your problems and production requirements, to coordinate a plan to eliminate bottlenecks or other deterrents to the present system. We do everything possible to modernize your present plant or submit a design for a new one, utilizing as much of your present equipment as possible with minimum production interruptions.

We draw up complete plans for most economical placements of equipment and handling of your ingredients through to the finished products; also draw the plans and specifications of materials needed for the contractor to build foundation, piers, columns and beams that will carry live load and dead load weights, with a margin of safety for unforeseen elements.

It will pay you, the same as it has the clients we have served and are serving, to have our organization work with you on your project.

**SPECIALIZING
IN
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FEEDMILL
and
PROCESSING
PLANT
LAYOUTS**



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A black and white portrait of a middle-aged man with a receding hairline, wearing a dark suit, white shirt, and a patterned tie. He is looking directly at the camera with a neutral expression. The background is dark and out of focus.

- s b d -

*If you circled the Globe a
hundred times you'd always
come back to ® BAGS!*

Always Something New!



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H. S. Mitchell, chief chemist, Swift and Co., Chicago, chairman; H. J. Deuel, Jr., professor of biochemistry, University of Southern California, Los Angeles, on "The Role of Fat in Human Nutrition"; Norris D. Embree, chemist, Distillation Products Inc., Rochester, N. Y., on "Recent Advances in the Chemistry and Nutrition of the Fat Soluble Vitamins"; Capt. George Gelman, executive secretary, committee on food research, Army Service Forces, Chicago Quartermaster Depot, on "Quartermaster Corps Committee on Food Research"; and H. C. Schaefer, manager, nutrition research laboratories, Ralston Purina Co., St. Louis, on "The Role of Proteins in Animal Nutrition."

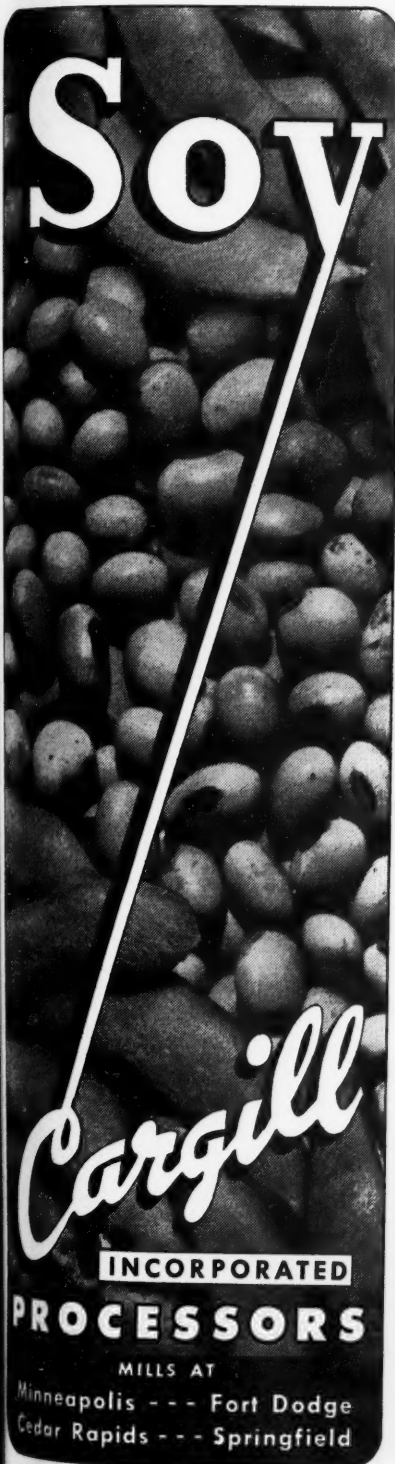
WINS IOWA CONTEST

Herman Klindt of Lake View won the 1945 Sac County, Iowa, 5-acre soybean yield contest with a field of Lincolns yielding 31.15 bushels per acre.

The contest was sponsored by Leo Williams of Williams Milling Co., Sac City, and the Sac County Farm Bureau.

Second place winner was E. H. Gard, Early, with Lincolns yielding 30.96 bushels.

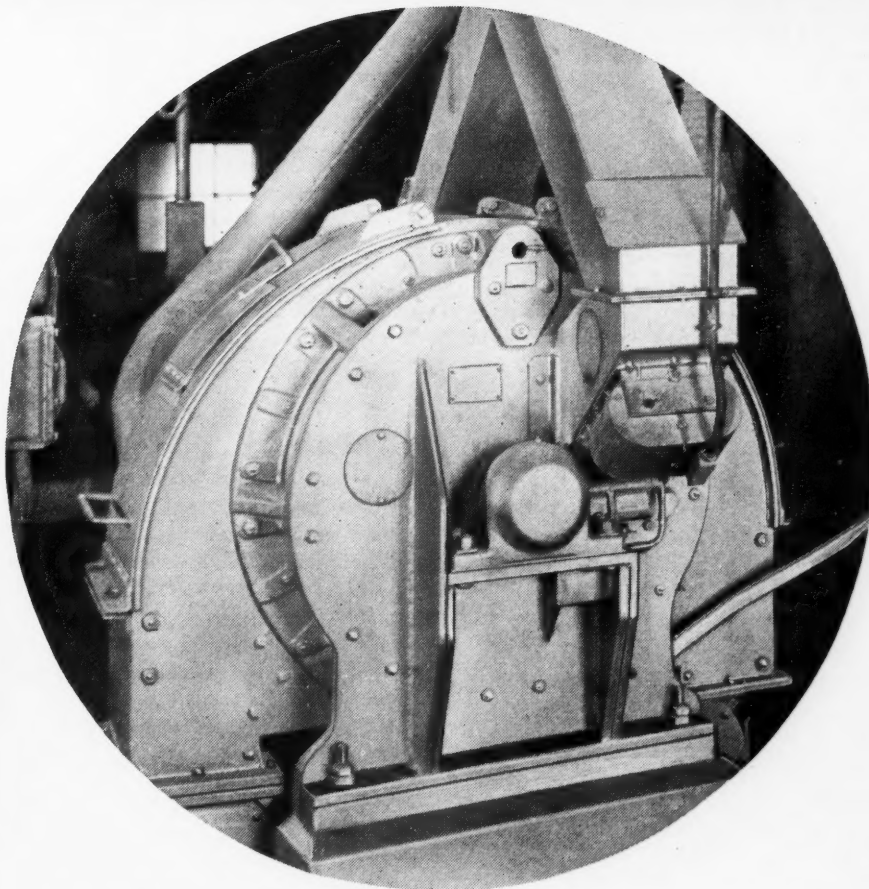
Other winners: Henry C. Hoft, Wall Lake, Richland 30.30 bushels; Hobart Hill, Sac City, Lincoln 28.92 bushels; George Diersen, Sac City, Richland 28.42 bushels; and Rabe Brothers, Lake View, Lincoln 25.67 bushels.



Soy

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IN ALL REDUCTION PHASES OF THE SOYBEAN INDUSTRY

In the processing stages uniform reduction means controlled operations and high yield.

In the final reduction phases uniform reduction results in control of grain size—freedom from "fines", high yield and maintained quality of finished product.

Prater Service will aid you in establishing proper reduction standards through engineering analysis, co-operative study, test grinds with particular reference to uniformity, control of grain size and quality of the grind at low power cost. Once established, Prater Pulverizers will unfailingly maintain those standards.

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PRATER PULVERIZERS UNIFORM REDUCTION UNIFORM IN RESULT

WASHINGTON Digest

New Under-Secretary

N. E. Dodd, the new Undersecretary of Agriculture, is a hard-hitting, "direct action" man who won the reputation of being a canny trader in the rough-and-tumble cattle business of the West.

His appointment puts the farmer wing of the Department of Agriculture into the strongest position it has held under Secretary Clinton Anderson.

Dodd is an Oregon rancher and wheat grower who started government service at the bottom of the AAA ladder as chairman of the Baker County wheat committee in 1933. The next year he headed the county corn-hog committee, and in 1936 became first Oregon AAA chairman. He came to Washington in 1939 as assistant director of AAA's Western Region, and since 1943 has been head of the agency.

Dodd succeeds John B. Hutson, a long-time USDA career man who resigned at the request of Secretary of State Byrnes to become one of eight assistant secretary generals of the United Nations Organization.

Dodd believes in price control and food subsidies through the reconversion period, but thinks failure to adjust grain ceilings early last winter made the grain-feed situation worse than it needed to have been. He had a hand in drafting the new wheat certificates plan, and advocated a set-aside on protein meals weeks before it was adopted.

Dodd places price stability from year to year as the most important price factor in a long-range farm program. The present farm parity formula suits him, providing upward adjustments are made in dairy and other low-parity commodities.

His long-time farm program has these main elements: Soil conservation, price-supporting crop loans, crop insurance, in-

dustrial crop utilization and expanded consumption programs — and should these fail, production control.

Imports of Copra

Imports of Philippine copra are beginning to hit the stride officials estimated last fall would be reached in December.

For the first half of March, the U. S. shipped in 11,500 tons of copra, more than the total last year.

It's now estimated copra imports will run around 25,000 tons a month for the balance of the year.

The pick-up in shipments was delayed because of the shipping shortage, and attempted purchases with dollars instead of foods. The Navy has now made ships available, and the U. S. is offering necessity goods in exchange for copra, instead of cash.

Main significance of the boost in copra shipments is that the Philippine import program is now a real, rather than a paper, program. However, it will have little effect in relieving the fats & oils shortage. Prewar Philippine copra imports ran to about 50,000 tons a month.

Price Ceiling

OPA plans to put price ceilings on the 1946 crop of soybeans at the same level as last year — \$2.10 a bushel for No. 2 grade green and yellow beans; \$1.90 a bushel for No. 2 brown, black and mixed.

The proposed ceilings, announced in advance to fulfil the legal requirement that growers be given notice at least 15 days ahead of planting time, won't apply to seed beans or to sales for making food products which don't involve oil extraction.

The question of boosting price ceilings on protein meals is still hanging fire. USDA has proposed jacking up meal ceilings so

By PORTER M. HEDGE

Washington Correspondent for
The Soybean Digest

part of the subsidy contained in the \$2.04 price support can be eliminated.

Officials close to the price discussions indicate that meal ceilings either will be hiked \$10 to \$12 a ton, or no change will be made.

No action is expected before the 1946 crop of oilseeds is crushed.

Foreign Shipments

Shipment of 150,000 bushels of soybeans to Great Britain and 100,000 to The Netherlands is expected to wind up major soybean exports from last year's crop.

USDA officials say there may be some small quantities shipped this spring and summer, but no large amounts until the next crop is harvested.

The exports to Britain and Holland represent the last shipments under old obligations, some of them as old as 6 months.

USDA, meantime, has purchased 60 million pounds of soy flour, and 100 million pounds of dry soups containing soya, for UNRRA, the international relief agency. Procurement officials are having some difficulty in getting delivery on the flour.

Protein Set-Aside

Government - directed shipments of set-aside protein meals ran to a total of 52,000 tons for the first quarter of 1946 — from Jan. 21, when the set-aside was re-instated, through March.

Shipments to date have gone to 35 states, and because of the feed demand the set-aside has been hoisted from 5 to 10 percent.

WE are equipped to grind and corrugate mill rolls up to 19 inches in diameter by 60 inches long. After July 1 we will be equipped to grind rolls 36 inches in diameter by 200 inches long, overall. Mirror finish for fine grinding, velvet finish for capacity.

Your patronage solicited.

Prices on request.

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EXPERIMENT STATION

Varieties in Delta

Uniform variety tests have been conducted at a number of locations in the Yazoo-Mississippi Delta, as a part of the breeding program of the U. S. Regional Soybean Laboratory.

Results of the tests conducted at Tunica, Stoneville, Anchorage, Satartia and Onward in 1945 are given by Paul R. Henson and Robert B. Carr in *Mississippi Farm Research* for January 1946.

Varieties were in four groupings according to their maturity, from early, maturing prior to September 15, to late, after November 1.

Of the early maturing strains, C101 and S100 yielded significantly more than Macoupin, a commonly known commercial variety of these strains. The variety S100 is taller, produces seed of slightly higher quality and matures approximately 10 days later than C101. S100 is low in oil, while C101 is a good oil bean containing approximately 2 percent more oil.

Ogden is definitely the highest yielding variety of those normally maturing between October 1 and 15. The 2-year average yield of this variety at Tunica, Stoneville and Anchorage was 34.5 bushels, or 40 percent more than the next highest yielding variety. The chief objection to Ogden is that it shatters on certain soil types and under dry climatic conditions at harvest. Even on soils where shattering usually occurs, many farmers prefer Ogden to such non-shattering, lower yielding varieties, as Arksoy 2913 and Ralsoy.

Of the varieties normally maturing the last half of October, Volstate and Roanoke were equally productive. The two varieties are similar but the oil content of Roanoke is slightly higher. Both are non-shattering, erect growing, and of sufficient height to combine readily. Wood's Yellow has been quite productive in a number of locations in the Delta, but is low in oil and shatters under dry conditions.

The late maturing varieties have not been as productive or as high in oil content as the better varieties of earlier maturity. The yields of strictly grain types such as Mamotan, Mamloxi, Delsta, and Nanda have not been greatly different from those of the tall growing Louisiana strains, Acadian, L. Z., and Pelican.

The dates of planting tests have shown that soybeans may be planted from early April to early June with equally good results. This long planting period should enable Delta farmers to readily fit soybeans into their planting schedules. The results indicate that the optimum combining period of the Ogden variety can be increased by early and late plantings.

INDIANA

(Continued from page 8)

fertilizer and 16 fertilized in the row with the corn planter.

Growers indicated their faith in the value of inoculation by making sure that it was present in spite of frequent soybean production on their farms. Ninety-nine inoculated the seed.

All of the 115 growers who planted in rows, gave row cultivations. Most of them used the rotary hoe or spike toothed harrow for early cultivations. The majority gave two row cultivations, and many gave three. Solid seedings were generally cultivated with the rotary hoe.

— s b d —

ROACH

(Continued from page 11)

bushels of soybeans grown or less bushels of soybeans grown, will depend upon the return which the farmer receives for doing that job.

Better yields of soybeans through research, which will lower the farmer's cost of production, or, wider markets for products manufactured from soybeans, or a combination of these factors will encourage the production of soybeans.

Restricted markets, or increased yields and consequently lower costs of competing crops, or a combination of these factors, will cause a curtailment in the number of bushels of soybeans produced.

The solution to this problem is in our hands. How well we the farmers, and we the merchandisers, do our respective shares will determine the future of soybeans not only for 1946, but in the years to come.

The late announcement of a support price, the feed grain shortage, the desire to establish more clover and alfalfa, the need for rotation pasture, and the inability to get soybean oil meal from the crop produced in 1945, will cut the acreage for 1946 approximately 20 percent, or, from 10½ million acres to 8½ million acres.

It is possible to regain some of this acreage, depending upon the kind of spring we have. A late, wet spring that discourages the planting of small grain and corn will increase the acreage of soybeans, and it is within the realm of possibility that a backward season in 1946 would increase the acres of soybeans planted to approximately the same as for 1945.

In conclusion, let me reiterate my opening sentence.

The soybean situation for 1946 is not favorable. There will be another scramble for soybeans next fall and the processing capacity of our nation will be partially unemployed for the processing year of 1946 and 1947.



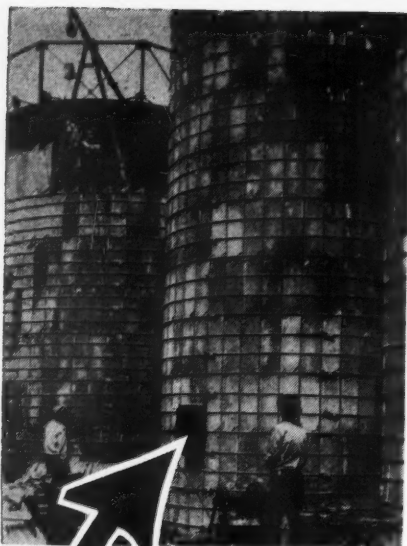
Caterpillars can be effectively controlled with *Chemically Refined* ALORCO CRYOLITE insecticide

Your yield can be bigger and crop freer from damage if you fight caterpillar infestation with ALORCO Cryolite, the insecticide chemically controlled to fit your needs exactly. Composed of 90% killing ingredients, ALORCO Cryolite is harmless to foliage and soil balance. It dusts or sprays easily, gives maximum lasting coverage, affords complete protection. Chemically controlled particle size virtually eliminates abrasive action on equipment. Ask your dealer for ALORCO Cryolite, and be sure of the best. Cryolite is recommended by the U. S. Dept. of Agriculture for control of soybean caterpillars.

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ERECTING BINS FOR SOYBEAN STORAGE

Soybeans have arrived as a major crop — which means adequate storage facilities are needed in the soybean business. Neff & Fry super-concrete stave bins provide quick, economical storage. Hundreds erected the past five years and scores more going up. Any capacity required. Fast erection by trained crews. Every installation guaranteed. 1945 catalog explains super-concrete stave construction. Write Also monolithic bins.

THE NEFF & FRY CO.
CAMDEN, OHIO

**N & F
BINS**

ARTICLES OF INCORPORATION OF

AMERICAN SOYBEAN ASSOCIATION

The persons whose names are signed hereto as incorporators and all persons who may become associated with them as members of this Association hereby form a non-profit body corporate, under the provisions of Chapter 394 of Title XIX of the 1939 Code of Iowa and amendments thereto, for the purposes hereinafter set forth, and hereby adopt the following Articles of Incorporation:

ARTICLE I. Name.

The name of this corporation shall be AMERICAN SOYBEAN ASSOCIATION.

ARTICLE II.

Principal Office or Place of Business. The location of the principal office or place of business of this corporation shall be at HUDSON, BLACK HAWK COUNTY, IOWA.

ARTICLE III. Business or Objects.

The business or objects of this corporation shall be to bring together, for co-operation and co-ordination of effort, all persons interested in the production, distribution and utilization of soybeans; to collect and disseminate, by publication and otherwise, the best available information relating to both the practical and scientific phases of the problem of increased yields coupled with lessened cost; to safeguard production against disease and insect pests; to develop better and new varieties; to encourage the interest of federal and state governments and experimental stations in the United States; and to render all possible service to the members of the Association.

ARTICLE IV. Membership.

Any person interested in soybeans may become a member of this Association, subject to compliance with the By-laws of the Association and the payment of membership fees or dues therein fixed.

ARTICLE V. Directors and Officers.

The affairs of this corporation shall be managed by a Board of Directors of not less than five (5) nor more than fifteen (15) members, to be elected at the annual meeting of the corporation for terms as fixed by the By-laws; and by the following officers: President, Vice-president, Secretary and Treasurer, to be elected by the Board of Directors at the annual meeting of the Board; said Directors and Officers to hold office until their successors have been elected and qualified. They shall have and exercise powers usually incident to such positions and such as may be specified in the By-laws of the Association.

The first Board of Directors and Officers are the following:

Directors

Ersel Walley, Fort Wayne, Indiana; David G. Wing, Mechanicsburg, Ohio; John Dries, Saukville, Wisconsin; Harry A. Plattner, Malta Bend, Missouri; Jacob Hartz, Stuttgart, Arkansas; Gilbert Smith, Newman, Illinois; John Sand, Marcus, Iowa.

Officers

President: Howard L. Roach, Plainfield, Iowa; Vice-president: Walter W. McLaughlin, Decatur, Illinois; Secre-

• The American Soybean Association has operated as an unincorporated Association since its organization in 1920. Due to the increased scope of its activities it was deemed advisable to incorporate and authorization to do so was voted at the 25th annual meeting of A. S. A. in 1944. The Association began operating as a corporation February 28, 1946.

tary: J. M. Strayer, Hudson, Iowa; Treasurer: J. B. Edmondson, Clayton, Indiana.

ARTICLE VI. Meetings.

The annual meeting of the members of the Association shall be held during the month of September in each year, on a date and at the place to be fixed by the Board of Directors, written notice thereof to be given to the members ten (10) days prior thereto.

The annual meeting of Directors shall be held immediately following the annual meeting of members.

ARTICLE VII.
Amendment to Articles of Incorporation. These Articles of Incorporation, except Article X, may be amended by a vote of a majority of the members, at any annual meeting of the Association, or at a special meeting called for that purpose by the President on his own motion or at the request of a majority of the members of the Board of Directors; upon fifteen (15) days written notice, specifying the time and place of such meeting and the proposed amendment or amendments to be considered.

ARTICLE VIII. Withdrawal of Members.

Any member of this Association may withdraw by written notice to the Secretary or by failure to pay the annual membership fee or dues as and when required by the By-laws of the Association.

A member, upon withdrawal, shall not be entitled to receive any share or part of the assets or property of the corporation.

ARTICLE IX. By-laws.

The Board of Directors shall have power to adopt, change and amend, by-laws for the Association. Such by-laws may also be amended or changed by the members at any annual meeting.

ARTICLE X. Private Property Exempt.

Private property of the members of this Association shall be exempt from liability for debts of the corporation, and this Article shall never be altered, changed or repealed.

IN WITNESS WHEREOF we have hereunto set our names this 30th day of January, 1946. Howard L. Roach, Walter W. McLaughlin, J. M. Strayer, J. B. Edmondson, Ersel Walley, John P. Dries, Jacob Hartz, D. G. Wing, Harry A. Plattner, Gilbert F. Smith and John Sand.

STATE OF IOWA)
County of Bremer) ss.
On this 30th day of January, 1946,
before me, a Notary Public in and for

ZIMMERMAN ALDERSON CARR COMPANY

BROKERS IN VEGETABLE OILS

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L. D. 29 Randolph 2037 L. D. 30

NEW YORK

MEMPHIS

DALLAS

Bremer County, Iowa, personally appeared Howard L. Roach, Walter W. McLaughlin, J. M. Strayer, J. B. Edmondson, Ersel Walley, John P. Dries, Jacob Hartz, D. G. Wing, Harry A. Plattner, Gilbert F. Smith and John Sand; Howard L. Roach, J. M. Strayer and John Sand being incorporators, to me known to be the persons named in and who executed the foregoing Articles of Incorporation and acknowledge the execution of the same to be their voluntary act and deed for the purposes therein set forth.

KENNETH B. ORCUTT
Notary Public.

BY-LAWS OF

AMERICAN SOYBEAN ASSOCIATION MEMBERSHIP. Those persons who become members of the Association by payment of dues will be regarded and carried on the records as active members. Active members will each be entitled to one vote at all meetings of the Association, to hold office, to receive a copy of the Articles of Incorporation and By-laws, and to receive a copy of all publications of the Association.

Business organizations, corporations, partnerships and other agencies interested in the welfare of the soybean industry shall be extended the privilege of holding Associate memberships in the Association. Such associate memberships shall carry all membership privileges in the Association except privilege of vote and power to hold office.

Persons who have rendered, or may render, distinctive service to the Association or to the development of the soybean industry may, on recommendation of the Board of Directors, be elected Honorary members, for life, and shall not be required to pay dues, but shall have all privileges of Active members.

The Board of Directors may, at any time, by majority vote, cancel the membership of any member, or refuse membership to any person, when the welfare of the Association, in their judgment, justifies such action.

MEETINGS — QUORUM. The Secretary shall mail to each member a notice of the time and place of each meeting at least ten (10) days before the date of the meeting. Publication of notice of meeting in THE SOYBEAN DIGEST shall be regarded as official notification of any annual or special meeting of the membership.

Ten active members shall constitute a quorum at any meeting of the Association.

Special meetings of the Association may be called by the President on his own motion or at the request of a majority of the members of the Board of Directors, by ten (10) days written notice to each member of the time and place of holding such meeting, which notice shall state the matters to be considered at such meeting.

Special meetings of the Board of Directors may be called by the President, or by the Secretary on request of three (3) members of the Board.

A majority of the members of the Board of Directors shall constitute a quorum.

Only members in good standing may vote at meetings.

DUES. The annual dues of active members shall be Two Dollars (\$2.00) per year.

The annual dues of Associate members shall be Ten Dollars (\$10.00) per year.

PRESIDENT—TENURE. The office of President of the Association shall not be held by one person for more than two (2) years consecutively.

NOMINATING COMMITTEE. The President shall appoint a Nominating Committee of five (5) or more members to propose the names of nominees for Directors at the annual meeting. At least two (2) members of such nominating committee shall be past Presidents of the Association, if possible. Other nominations may be made by members, if they so desire.

BOARD OF DIRECTORS. The Directors to be elected at the 1946 annual meeting of the Association shall, at their annual meeting following, draw lots for one and two year terms. One-half of their number, or if the Board consists of an odd number then one more than one-half, shall serve for one year, and the others for two years. Thereafter, Directors shall be elected for two (2) year terms.

The Directors shall be chosen from the soybean producing areas, and not more

than four (4) Directors shall be residents of any one State.

OFFICERS—The President shall be the chief executive officer of the Association and shall preside at all meetings of the Association and of the Board of Directors.

The Vice-president shall perform the duties of President in case of the President's inability to act.

The Secretary shall have control of the books and records of the Association, keep a record of the proceedings of the meetings of the Association and of the Board of Directors, have custody of the seal, and shall make annual reports and such other reports as the Board of Directors may call for.

The Treasurer shall receive and deposit for safe-keeping and pay out the moneys of the Association under the direction of the Board of Directors. He shall give bond, at the expense of the Association, in such amount, form and with such surety as may be required by the Board.

SEAL. The seal of the Association shall be (SEAL)

PUBLICATIONS. The Soybean Digest shall be the official publication of the Association. The Board of Directors may issue such other publications as may be deemed advisable.

The Association being a non-profit corporation, it is its purpose to use its

available funds for promotional work. The annual dues and moneys derived from other sources, if any, not used by the Association for current operations, shall be available for educational work. **BY-LAWS.** The By-laws of the Association may be amended at any annual meeting, or special meeting called for that purpose, by a two-thirds vote of the members present.

RULES OF ORDER. Roberts' Rules of Order shall be authority on all points not covered by the Articles of Incorporation and By-laws of the Association.

— s b d —

CERTIFY RECORD VOLUME OF SEED

A total of 2,400,149 bushels of soybeans grown from certified seed were harvested in 1945, according to USDA extension service. This compares with 929,955 bushels in 1944.

A record number of 43 varieties was certified in 1945. Lincoln and Earlyana are the leading varieties in the Midwest in the amount of certified seed available.

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--- MARKET STREET ---

We invite the readers of THE SOYBEAN DIGEST to use "MARKET STREET" for their classified advertising. If you have processing machinery, laboratory equipment, soybean seed, or other items of interest to the industry, advertise them here. Rate: 5c per word per issue. Minimum insertion \$1.00.

WANTED — Experienced day superintendent for new mill. Only A-1 may need apply. **EXCELLENT TERRITORY**, liberal salary and bonus for right man. Address T. B., Soybean Digest, Hudson, Iowa.

CERTIFIED LINCOLN soybean seed, also Earlyana for sale. Special price in truck or carload lots. Bert L. Benskin, Laurel, Iowa.

WANTED — To purchase soya bean mill located in central or northern Ohio. Address D. M., Soybean Digest, Hudson, Iowa.

WANTED — Clipper seed cleaner. Please state size and condition. Frank Diekemper, 1104 N. Illinois St., Belleville, Ill.

FOR SALE — 1,600 bushels certified Lincoln soybeans, Tested Feb. 26, 1946. Purity 99.7%. Germination 93%. Price \$3.50 per bu. at warehouse. Charles Ackerman, Jr., Mechanicsburg, Ohio.

Seed Directory

ILLINOIS

Arcola — Geo. L. Pfeifer, 5,000 bu. certified Lincoln.

Atwood — John H. Livengood, Sr., 300 bu. certified Dunfield; 700 bu. Lincoln, certification can be completed after cleaning.

Bowen — Roy A. Morton & Sons, Lincoln, Illini, and Earlyana, all certified.

Cambridge — Hadley Farms, Rt. 2, 1,300 bu. certified Lincoln.

Cantrall — J. Harold Canterbury, 2,000 bu. certified Lincoln; 600 bu. certified Illini.

Champaign — Seeber Brothers, Rt. 3, 2,000 bu. certified Chief; 500 bu. certified Lincoln.

DeKalb — DeKalb Agricultural Association, Inc., 310 N. Fifth St., 4,500 bu. certified Earlyana; 2,400 bu. certified Lincoln.

Ladd — Martin Manning, 1,500 bu. certified Lincoln.

Laura — Forest M. Oakes, 2,300 bu. certified Lincoln.

Laura — Hubert L. Oakes, 1,000 bu. certified Lincoln, purity 99.9%, germination 97%; 600 bu. uncertified Lincoln.

Lomax — John Peasley, 2,500 bu. certified Lincoln.

Ludlow — Ludlow Coop. Elevator Co., 3,000 bu. Lincoln, some certified; 3,000 bu. uncertified Illini.

Mattoon — Turner Seed & Supply, IC and Champaign St., 500 bu. certified Richland; 2,000 bu. uncertified Richland; 5,000 bu. certified Lincoln; 20,000 bu. uncertified Lincoln; 1,000 bu. uncertified Patoka; 4,000 bu. uncertified Mt. Carmel; 5,000 bu. uncertified Chief, Illini, Dunfield.

Monmouth — Ralph Wells & Co., certified Lincoln, \$3.00 per bu.

Nokomis — E. E. Rademacher, Box 184, 1,500 bu. certified Lincoln; 350 bu. uncertified Illinois (brown hay).

Nokomis — Ike Smith, Rt. 2, 3,000 bu. certified Lincoln.

New Berlin — Evan F. Taylor, Rt. 1, 2,000 bu. certified Lincoln.

Normal — National Hybrid Corn Co. (of Illinois), 102 E. Phoenix Ave., 2,500 bu. certified Lincoln.

Onarga — Onarga Farms, S. B. Cultra, 1,000-3,000 bu. certified Lincoln.

Ottawa — Willis Thorsen, Rt. 2, 2,100 bushels certified Lincoln, varietal purity 99.9, germination 97%.

Peoria — W. O. Pendarvis, 1007 Central Nat'l Bank Bldg., 600 bu. certified Lincoln.

Peoria — W. G. Kelly, Kelly Seed Co., 116-18 S. Wash. St., 11,000 bu. certified Lincoln; 800 bu. uncertified Lincoln; 1,500 bu. uncertified Illini; 1,500 bu. uncertified Dunfield; 1,200 bu. uncertified Chief; 2,800 bu. uncertified Richland; 800 bu. uncertified Mt. Carmel; 6,500 bu. uncertified Patoka.

Pesotum — D. W. Burnett, 3,500 bu. certified Lincoln, no germination test made yet.

Rantoul — Harold Zehr, Rt. 1, 3,000 bu. certified Illini; 500 bu. certified Lincoln.

Roadhouse — A. D. McLamar, Rt. 1, 400 bu. certified Chief.

Roseville — Pratt Seed Farms, Dale Watson, Mgr., 5,000 bu. certified Lincoln; 1,500 bu. uncertified Lincoln.

Royal — Henry Osterbur, Jr., 1,400-1,500 bu. certified Lincoln, germination 96%, purity 99.5%.

Savoy — R. J. Hixson, P.O. Box 26, 1,500 bu. Lincoln grown from own certified seed, will furnish certification if wanted.

Seymour — Paul V. Klein, Rt. 1, 3,000 bu. certified Lincoln.

Sidney — S. A. Buddemeier, Rt. 1, 1,000 bu. certified Lincoln.

Springfield — R. C. Graham, 308 Ferguson Bldg., 1,500 bu. certified Lincoln, in 2-bu. bags.

Stonington — James Meridith, 1,500 bu. certified Lincoln.

Sullivan — Landers Seed Co., 1,500 bu. certified Lincoln; 1,500 bu. uncertified Lincoln; could also supply several thousand bu. uncertified Lincoln from certified stock in hands of farmers in community.

Taylorville — Debrun Bros., 400 N. Main St., 1,400 bu. certified Lincoln.

Tolono — W. E. Riegel, 1,000 bu. Lincoln grown from 1945 certified seed.

Tuscola — A. N. Cabalek, 800 bu. certified Illini; 1,400 bu. certified Tama; 300 bu. certified Lincoln.

Utica — R. W. Jones, Rt. 1, 1,500 bu. certified Lincoln.

Witt — Witt Elevator, 3,000 bu. certified Lincoln; 3,000 bu. uncertified Illini; 3,000 bu. uncertified Chief; 2,000 bu. uncertified Dunfield; 1,500 bu. uncertified Virginia.

INDIANA

Amboy — Glen D. Pence & Son, Rt. 1, 2,000 bu. certified Lincoln.

Berne — Earl Sipe, Rt. 2, 200 bu. certified Lincoln.

Bluffton — Herman L. Miller, Rt. 1, 1,400 bu. certified Lincoln, purity 99.9%; 600 bu. certified Richland, purity 99.9%.

Brookville — George A. Prifogle, 1,000 bu. certified Lincoln, foundation seed stock, germination 95%.

Camden — Taylor Fouts, Soyland, St. RDS. No. 29 and 218, 1,500 bu. certified Lincoln; 1,500 bu. certified Tama oats.

Ft. Wayne — O. L. Bryant & Son, Rt. 4, 4,000 bu. certified Lincoln; 800 bu. certified Earlyana.

Greenfield — Lewis C. Hardin, Rt. 1, 2,000 bu. certified Lincoln.

Huntington — D. E. Whinery, Rt. 6, 800 bu. Indiana certified Lincoln.

Huntington — Allan Anson, Rt. 2, 1,500 bu. certified Lincoln.

Kouts — Walter Heiniger, 1,200 bu. certified Lincoln.

Lafayette — Agricultural Alumni Seed Improvement Association, Inc., Rt. 1, 2,000 bu. certified Lincoln, foundation seed.

McCordsville — Maurice Woodward, 1,500 bu. certified Lincoln.

Muncie — O. C. Russell & Sons, Rt. 1, 1,000 bu. certified Lincoln, foundation seed; 500 bu. certified Kingwa foundation seed.

Princeton — Princeton Farms, 1,000 bu. certified Lincoln; 2,000 bu. certified Gibson; 2,000 bu. certified Patoka.

Remington — Edward F. Lehman, certified Lincoln foundation stock.

Remington — Chester B. Biddle, 10,000 bu. certified Lincoln.

Remington — Glenn L. Kinsell, 5,000 bu. certified Lincoln; 3,000 bu. certified Earlyana; 500 bu. certified Richland.

Valparaiso — L. K. Wyckoff, Rt. 3, 2,500 bu. certified Lincoln; 1,200 bu. certified Lincoln foundation; 2,500 bu. certified Earlyana; 1,000 bu. certified Earlyana foundation; 500 bu. certified Richland.

Walton — Lloyd W. Toney, Rt. 2, 500 bu. certified Lincoln; 200 bu. certified Earlyana.

Waveland — Harry N. Moser, 1,000 bu. certified Lincoln; 400 bu. certified Earlyana.

Windfall — Mitchell Farms, 2,000 bu. certified Earlyana; 4,000 bu. certified Lincoln.

IOWA

Batavia — Maurice Laughlin, 500 bu. certified Lincoln.

Batavia — Glenn Willhoit, 500 bu. certified Lincoln 95% germination.

Boone — Lloyd F. Nelson, Rt. 2, 300 bu. certified Lincoln.

Boone — Roscoe Marsden, Rt. 1, 1,000 bu. certified Lincoln.

Castana — Fred W. Hawthorn, 2,000 bu. certified Lincoln.

Center Point — Elmer F. Burr, 2,000 bu. certified Lincoln.

Crawfordsville — Richard Stephens, 600 bu. certified Lincoln.

Des Moines — A. B. Kline, 3122 49th St., 1,200 bu. certified Lincoln.

Dysart — Henry Hilmer, 3,000 bu. certified Lincoln.

Estherville — A. B. Rosenberger, 250 bu. certified Earlyana; 200 bu. Richland from certified seed; 150 bu. uncertified Habaro.

Harlan — Kilpatrick Hybrid Corn Co., Rt. 2, 285 bu. certified Lincoln.

Hudson — Strayer Seed Farms, 1,000 bu. certified Lincoln; 700 bu. uncertified Banai; 400 bu. uncertified Giant Green; 200 bu. uncertified Sac.

Independence — T. J. Searcy, 500 bu. certified Lincoln.

Laurel — Bert L. Benskin, certified Lincoln, Earlyana.

Marcus — John Sand, 400 bu. certified Lincoln; 3,000 bu. certified Earlyana; 1,000 bu. certified Richland.

Marshalltown — Clarence R. Zink, Rt. 5, 700 bu. certified Lincoln.

Marshalltown — Kenneth R. Lynk, Route 1, 4,500 bu. certified Lincoln; 350 bu. Richland from certified seed.

New Sharon — Eddie De Jong, Rt. 1, 200 bu. certified Lincoln.

Packwood — Carl Edmund, 2,000 bu. certified Lincoln.

Pilot Mound — W. W. Lundberg, 200 bu. certified Lincoln.

Richland — Alva Leo Baker, Rt. 1, 900 bu. certified Lincoln.

Templeton — Irlbeck Hybrid Seed Farm, 400 bu. certified Lincoln.

Tipton — Edwin Butterbrodt, 1,500 bu. certified Lincoln; recleaned and bagged.

Traer — Roy Kern, Lincoln, Earlyana and Richland, certified or uncertified; Tama, Boone and Vickland oats.

Tripoli — R. O. Wikner, Townview Farm, certified Earlyana, germination 97%; Tama oats grown from certified seed.

Union — Merle Stanfield, 2,000 bu. certified Lincoln.

Wall Lake — A. J. Graham, 1,500 bu. certified Lincoln.

Williams — Lawrence J. Reike, 2,500 bu. certified Lincoln.

Winfield — Harry Rossiter, 500 bu. certified Lincoln, germination 96%.

MINNESOTA

Hector — Kenneth C. Butler, 200 bu. certified Wisconsin Mandarin; 100 bu. certified Ottawa Mandarin.

Cannon Falls — Geo. F. Schwartaw, 500 bu. registered Habaro.

Montevideo — John W. Evans, Rt. 1, 400 bu. Habaro; 200 bu. Pridesoy; 400 bu. certified Ottawa Mandarin.

OHIO

Bucyrus — Earl G. Lowmiller, Rt. 3, certified Earlyana; uncertified Lincoln; certified Vicland oats.

Lima — The Ackerman Co., 215 W. First St., 600 bu. certified Lincoln; 500 bu. uncertified Lincoln; 1,000 bu. uncertified Kingwa.

Maumee — W. N. Woods & Son, Monclova Road, 250 bu. Earlyana; 600 bu. Lincoln.

Maumee — H. P. Schaller & Sons, Rt. 1, 1,500 bu. certified Lincoln; 600 bu. uncertified Lincoln.

Van Wert — Marsh Foundation Farms, Box 150, 5,000 bu. Ohio certified Lincoln; 5,000 bu. uncertified Lincoln.

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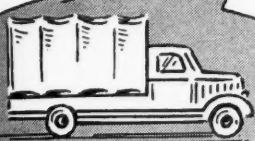
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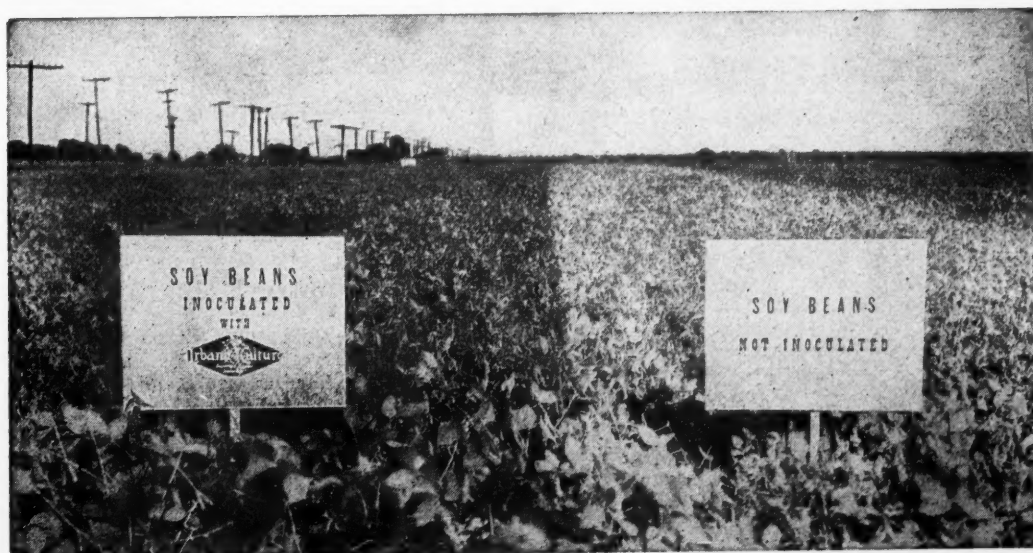
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UNION SPECIAL BAG CLOSING MACHINES

In The MARKETS

● **ANALYSIS OF SOYBEAN PRODUCTS.** A summary of soybean samples analyzed by Woodson-Tenent Laboratories during January.

Average Chemical Analyses of Soybeans Grown in Tennessee, Arkansas, Mississippi, Missouri.

	Oil (Calculated to 14% moisture) %	Oil Yields per bushel* lbs.
Average	18.0	8.3
Month's highest	19.6	9.3
Month's lowest	15.3	6.6

Average Chemical Analyses of Soybeans Grown in Minnesota, Wisconsin, Michigan, Ohio, Indiana, Illinois, Iowa, Kentucky, Virginia, Kansas, Nebraska.

Average	17.3	7.9
Month's highest	19.1	9.0
Month's lowest	14.8	6.3

Soybean Oil Meal — Average of All Soybean Oil Meal Analyses			
	Moisture %	Oil %	Protein Standard %
Average	12.60	4.79	43.41
Month's best	10.80	3.98	45.63

Analyses of Soybean Oil

	F.F.A. %	Gardner Break %	Moisture & Volatiles %	Refining Loss %	Color (red)
Grand Average	0.7	0.77	0.14	8.1	7.6
Month's Best	0.6	0.57	0.06	6.4	7.8

*Calculated 12.50% moisture and 5% oil left in meal.

FOR MONTH OF FEBRUARY

Average Chemical Analyses of Soybeans Grown in Tennessee, Arkansas, Mississippi, Missouri.

	Oil %	Oil Yields per bu. lbs.
Average	18.0	8.3
Month's highest	19.0	9.4
Month's lowest	17.4	8.0

Average Chemical Analyses of Soybeans Grown in Minnesota, Wisconsin, Michigan, Ohio, Indiana, Illinois, Iowa, Kentucky, Virginia, Kansas, Nebraska.

Average	17.4	8.0
Month's highest	18.7	9.2
Month's lowest	14.9	6.8

Soybean Oil Meal — Average of All Soybean Meal Analyses			
	Moisture %	Oil %	Protein Standard %
Average	12.68	4.86	43.25
Month's best	12.10	4.20	45.63

Analyses of Soybean Oil

	F.F.A. %	Gardner Break %	Moisture & Volatiles %	Refining Loss %	Color (red)
Grand average	0.7	0.82	0.16	10.6	7.1
Month's best	0.5	0.58	0.09		

● **FATS AND OILS IN SOAPS.** The complete list of fats and oils consumed by U. S. soap makers during the third quarter of 1945 as reported by *Soap and Sanitary Chemistry*, follows:

Vegetable Oils

	Lbs.
Cottonseed, crude	409,000
Cottonseed, refined	187,000
Peanut, refined	42,000
Coconut, crude	7,512,000
Coconut, refined	3,772,000
Corn, crude	164,000
Corn, refined	5,000
Soybean, crude	478,000
Soybean, refined	291,000
Olive edible	2,000
Olive, inedible	49,000
Olive foots	387,000
Palm kernel, crude	4,201,000
Palm kernel, refined	1,952,000
Palm, crude	5,611,000
Palm, refined	567,000
Babassu, crude	6,411,000
Babassu, refined	6,868,000
Linseed	255,000
Castor No. 1 crude	67,000
Castor No. 3 crude	50,000
Castor, sulfonated	105,000
Other vegetable	149,000

How to Use Spergon with Legume Inoculants On Soy Bean Seed

Repeated tests have indicated the high value of Spergon in preventing seed decay and increasing emergence, especially in a cold wet planting season.

Tests also show that Spergon is compatible with legume inoculants and that you may obtain double benefits by treating seed with Spergon and with bacterial cultures. Here's how it's done:

1. First treat seed with Spergon. The recommended rate is two ounces per bushel. Your state experiment station will advise dosages to meet special local conditions.
2. Inoculate only with strong cultures containing viable bacteria and apply excess amounts over that recommended for untreated seed.
3. Use just enough water to make culture cling to seed.
4. Plant within two hours after inoculating.

Write us for further information about the use of Spergon to increase soy bean stands and yield, and for copy of Soybean bulletin.

Advantages of Spergon

- Protects seed against decay caused by soil-borne and seed-surface fungi.
- Safe to use. Non-irritating and non-injurious to the operator when applying it to seed.
- Long lasting. Spergon does not deteriorate with age. May be applied months in advance of planting.
- Self-lubricating. No graphite needed in planter.

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EASY TO USE. Just spread a thin coating with a paddle or knife, press pieces firmly together and allow to dry. They will not peel or tear.

WATERPROOF. Tehr-Greeze will not loosen even when washed. Available in conveniently sized containers. Write for trade prices.

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	lbs.
Lard	10,539,000
Oleo oil	1,133,000
Tallow, edible	8,087,000
Tallow, inedible	211,142,000
Fish oil	24,752,000
Greases	88,810,000

● **FEBRUARY SOYBEAN INSPECTIONS.** Inspected receipts of soybeans increased in February, with continued improvement in quality, according to inspectors' reports to the Grain Branch of the Production and Marketing Administration.

February inspections totaled 5,219 cars compared with 4,153 cars in January and 3,464 cars in December. The five-year average for the month of February for the crop years 1940-44 was 3,074 cars. Inspected receipts of October-February this season were 67,107 cars compared with 58,152 cars for the same period last season.

The quality of soybeans inspected in February continued to improve, 91 percent grading No. 2 or better compared with 88 percent in January and 77 percent in December.

February inspections included the equivalent of 113 cars inspected as cargo lots and truck receipts equivalent to about 31 cars.

● **COMMERCIAL SOYBEAN STOCKS.** Production and Marketing Administration's commercial grain stock report.

U. S. Soybeans in Stock and Afloat at Domestic Markets (1,000 Bu.)

	Mar. 5	Mar. 12	Mar. 19	Mar. 26	Apr. 2
Atlantic Coast	117	117	117	117	117
Gulf Coast	258	258	250	128	128
Northwestern and Upper Lake	1,973	1,870	1,674	1,573	1,469
Lower Lake	7,441	7,195	6,796	5,931	5,724
East Central	4,367	4,254	3,993	3,908	3,772
West Central South- western & Western ..	2,274	2,051	1,891	1,711	1,580
Total current week	16,430	15,745	14,721	13,368	12,790
Total previous week (revised)	17,231	16,429	15,754	14,720	13,367
Total year ago	19,399	18,883	18,180	17,152	16,508

● **STANDARD SHORTENING SHIPMENTS.** By members of Institute of Shortening Mfgs., in pounds.

March 9	7,465,597
March 16	7,603,630
March 23	7,063,129
March 30	5,116,007

U.S. MAIL Government Orders

● **APRIL PROTEIN SET-ASIDE.** The U. S. Department of Agriculture announced that processors will be required to set aside 10 percent of their April production of soybean, cottonseed, linseed and peanut oil meal. The quantity ordered set aside beginning Jan. 21 (when the set-aside order was reinstated) through March 31 was 5 percent.

EXCELLENT MILL SITE

The Soybean Center of the World

30 Acres at the Crossing of the Illinois
Central Railroad and the Belt Line.

W. R. SCHROEDER & SON, Realtors
137 East Main Street
Decatur, Illinois

